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**Andriotis, K. and Vaughan, D.R. (2009). The Pattern-matching Approach and its Application in Tourism Development. *Current Issues in Tourism*, 12(4): 315-336.**

## **ABSTRACT**

Tourism development cannot be fully understood and validated from a positivist perspective without the testing of theory against empirical evidence. Thus the pattern-matching approach studies phenomena on the basis of facts and observations relevant to the testing of theories and models. This paper compares two selected tourism development theories, diffusion and dependency, against empirical evidence from Crete. In doing this it has three main objectives: to set out the nature of the pattern matching approach; to illustrate the application of the pattern matching approach, in an exploratory way; and to evaluate the approach based on the evidence of the exploratory application.

**Keywords:** Pattern-matching approach, development theory, case study, tourism, Crete.

## **Introduction**

Tourism has increasingly been employed as a means of overcoming underdevelopment and as a way for many destinations to move from a position of 'poverty' to a position of 'wealth' (Andriotis, 2002; Tooman, 1997:214). Despite this increasing use of tourism as a development tool, a review of academic papers in the field of tourism development shows limited 'specific' attention being paid to the extent to which the development theories used in relation to tourism-led development are supported by empirical evidence and vice versa.

Thus, papers focusing on explaining the process of tourism-led development tend to exhibit one, or more, of four characteristics. First, they have tended to take their lead from more general theories of development rather than being 'new' tourism specific theories, although this should not be read as a negative comment about taking a lead from general theories. Second, they tend not to refer to any specific case (e.g. Britton, 1991; Brohman, 1996; Cater, 1987; Husbands, 1981; Kariel, 1989). Third, they tend to refer only to hypothetical cases (e.g. Butler, 1980; Miossec, 1977; Oppermann, 1993). Finally, with limited exceptions (e.g. Britton, 1989; 1991; Brohman, 1996; Husbands, 1981), they often pay little regard to the context of the overall development of the destination area in which tourism-led development is taking place.

On the other hand, case-based papers have focussed on the outcomes of tourism-led development. Thus they have presented the results of the measurement of the impacts of tourism on the economy (Fletcher, 1989; Henderson, 1975; IUOTO, 1976; Liu and Var, 1983; McCann, 1983; Seward and Spinard, 1982; Witt, 1987), the environment (Agarwal and Biswas, 1989; Andriotis, 2003a; Green and Hunter, 1993; Holder, 1988; Jackson, 1984), society (Andriotis, 2004; 2005; Dogan, 1989; Haukeland, 1984; Mathieson and Wall, 1982; Milman and Pizam, 1988), and culture (Dogan, 1989; Greenwood, 1978; Richards, 1996; 1999; Travis, 1982; UNESCO, 1976). These case studies may not situate themselves within any tourism

development framework/theory but they will have theoretical underpinnings such as, for example, the economic concepts underlying economic impact studies. However, their focus is not generally on developing theory but on providing evidence of the outcomes of tourism led development.

With this differentiation in approaches evident within tourism academic literature as the context, the aim of this paper is to explore a method of bringing together theory and practice. That approach is known as the pattern-matching approach. In brief, and in line with a positivist approach which is based on the use of carefully bounded experiments to test a particular theory (Otley and Berry, 1994), the pattern-matching method aims to study phenomena on the basis of facts and observations relevant to the testing of theories and models.

Thus this paper has the overall aim of examining the pattern matching approach. To achieve that aim the paper has three objectives. The first objective is, to set out the nature of the pattern matching approach. The second objective is to illustrate the application of the pattern matching approach, in an exploratory way. This application is based on two selected tourism development theories, diffusion and dependency, and it uses secondary information about tourism on the Greek island of Crete. The third objective is to provide an initial evaluation of the pattern matching approach based on the evidence of the exploratory application.

## **The Pattern Matching Approach**

The pattern matching approach in general

Otley and Berry (1994:48) believe there is scope for researchers to seek to modify theory in the light of new evidence in a given domain or to apply a theory to new domains. In doing this researchers will test theory against evidence and will reach conclusions on whether to abandon or modify the theory (Otley and Berry, 1994:48).

From a positivist perspective pattern matching is about matching the expected (i.e. the theory) to the observed (i.e. the findings of the case study). Theories set out analytical frameworks and specify clear explanations for the pragmatic world (Wacker, 1998:362). Thus, theories have been developed to reduce the complexity of the real world, in the interests of explanation, by highlighting the fundamental elements or characteristics of an actual situation or process (Pacione, 2001:98). Case studies, on the other hand, are generally aimed at identifying the dynamics present within single settings (Eisenhardt, 1989:534). In other words, they are aimed at identifying an integrated system of facts that contribute to a greater understanding about some phenomenon (Stake, 1994, Wilson and Vlosky, 1997). Generally the driving force in tourism case studies in the past has not been to test theory but to develop understanding, and perhaps theory, from the patterns that emerge.

In order to 'match' the expected to the observed the pattern-matching approach consists of three distinguishable phases (Terluin, 2003:303, Yin, 1993, 1994): the construction of the theory pattern, the construction of the case study pattern and the matching of theory to the case study. Each of these is explained in more detail below.

Phase one is the construction of the theory pattern. From the perspective of idealist positivism, phenomena are knowable through some theoretical lens and therefore theories are of primary importance. From the debates in development theory and tourism studies, this paper focuses on two major theories, dependency

and diffusion, as predicted pattern of events against which actual data will be compared. These theories are explained later in this paper.

Phase two is the construction of the case study pattern. Following the positivist notion of critical experiment, this is the phase where actual data are collected and stored in a case study pattern. Such data may be from secondary sources or collected specifically for the research. In this paper the data is existing information/commentaries about tourism development on Crete.

Phase three is the matching of the theory to the case study data. Realist positivism suggests that the main task of academic research is to develop explanations of phenomena. These explanations can develop via conjectures and refutations (Popper, 1963). To these ends, the final phase of pattern-matching is to compare the theory and the case study patterns by analysing whether the events in the theory pattern are in line with the case study pattern. In doing so there is a need to refer to the variables that determine the boundaries of tourism development theory and, subsequently, to find out whether these variables apply to the context being used. The evaluation of these variables is an important but difficult issue. Theory is not easy to unravel and therefore interpretations by the researcher are required to denote variables. This is a vital problem in the work of development theorists, since the researcher's beliefs may influence the outcome of the process.

#### The Pattern Matching Approach – The Specific Application

This section of the paper has, so far, dealt with the nature of the pattern matching approach in general. This sub-section sets out how the approach was operationalised in respect of this paper through the undertaking of the three tasks outlined above.

The first task was the identification and clarification of the variables/criteria that have been used as explanatory of, and illustrative of, the two development theories. In this process the literature review on dependency and diffusion was analysed and the main ideas of each paradigm were itemised into three main components based on soft systems theory: content of the process, the outputs of the process and the outcomes of the process. Content covers those things that are part of the process of development set out by the theory. They were systematically and objectively identified and categorised through a review of the literature. Outputs cover the way that the development will be exhibited 'on the ground'. Thus outputs are the physical pattern of tourism development, i.e. hotels, roads, airports, nature conservation, etc. Outcomes are how development is translated into political, economic, social and environmental impacts. Outcomes include the things that tourism provides to the local community, i.e. incomes, jobs, self-esteem, etc. Outputs, as well as, outcomes can be either direct (readily identifiable, or easily measurable, as being the result of tourism) and/or indirect (resulting from tourism but they are not readily, or easily identifiable in terms of the cause and effect of tourism, e.g. a nature conservation area may get more money because of tourism). The three components and associated variables/criteria are set out in table 1.

Table 1. The pattern criteria

The diffusionist paradigm	The dependency paradigm
Process	
Growth/change spreads from one location to others.	Tourism in the periphery is controlled and exploited by 'the industrial core'.
Content	
<p>The introduction of an innovation.            Catalyst through hierarchical diffusion – e.g. geographic levels.            Catalyst through neighbourhood (contagion) diffusion – areas close to each other.            Existence of change agents – individuals, organisations or institutions.            Copying of the innovators.            Local population accepts/does not modify externally generated change.</p>	<p>Ownership of tourism businesses by foreigners.            Multinationals dominate over the artisans.            Imports dominate over local production.            Dependency dominates over self-reliance.            Core dominates the tourist flow chain.            Top-down decision-making by elitist bodies exogenous to the community.            Core controls tourists' consumption.            Difficulty of locals in financing development.            The core forms alliances with periphery elites.            Core controls the development process.</p>
Outputs	
<p>Diffusion usually emerges in the core first.            Development is not evenly distributed.            Tourist resorts are usually created in the vicinity of international airports.            Local elites become forces of change.</p>	<p>Dependency between metropolitan and developing countries.            Dependency between the more developed urban centres and the peripheral areas.            The relative exclusion of the local producers.            Profit repatriation.            The importation of goods and services.            The employment of a foreign workforce            Expatriate management.            Absence of local capital, and the subsequent low investment and productivity.</p>
Outcomes	
<p>Disparities between socio-economic classes.            Regional imbalances.            Social change results from the borrowing or adoption of cultural traits.            Transition from tradition to modernity – agriculture to tertiary.</p>	<p>Periphery being trapped in a vicious circle of poverty.            Low multiplier effects.            Changing consumption habits of the local population.            The production surplus (profit, wages) often transferred from periphery to core.            Adverse effects on the environment, the society and the economy of periphery.            Periphery has reduced economic benefits.</p>

The second task was to assemble the historical, or secondary, data to be used in the pattern matching evaluation. This evidence was derived from a historical review of the island of Crete. Historical data for the earlier periods of development were obtained from Cretan newspapers and magazines dating from the beginning of the 20<sup>th</sup> century. Additional sources were used, such as published and unpublished studies.

The final task was to evaluate the match between the ‘predictions’ of the theory with the ‘reality’ of the case study experience. When matching the theory against the case study data the higher the number of similar events (variables) in the theory and the case study pattern the better the theory predicts the situation in the case study. Theory is used to provide predictions, or expectations, and theory is not accepted unless most of these are confirmed by data from the case study (Cambell, 1975). This theory testing using case data represents an important step in developing an applied epistemology. Theory-case study relationships have a cyclical, evolving, dialogue contributing to dialectical reasoning that identifies and resolves contradictions between ideas and reality (Lawrence, 1997; Taylor, 1980). Thus, case studies provide data that are inconsistent with, or consistent with, theoretical expectations. The whole process will suggest whether a set of theoretical statements require rejection, or modification, or, by implication of the decision on rejection or the need for modification, acceptance.

### **Applying the Approach - The Theory Pattern**

Development, by its nature, is a process of change that may be explained in a variety of ways (Friedmann, 1980). In their attempt to explain tourism development, researchers have extensively employed various theories (for example diffusion, dependency, sector paradigm, alternative, sustainability). However, there is no single unified theory of tourism development that commands universal assent and nor, perhaps, should we expect there to be.

For the purpose of this paper two development paradigms have been examined: diffusion and dependency. These two theories are put forward as explanations of development but the explanations are different because they are based on different paradigms. As a result they can be applicable in the same place at the same time. The main features of these two explanations are set out below. They are derived from the literature and the text describing them below is the source for the theory patterns identified in table 1.

#### **The Diffusionist Paradigm**

Many researchers have examined tourism development from the perspective of diffusion. Diffusion is a process whereby economic growth spreads-out from one location to a number of others (Auty, 1995, Rostow, 1990, Sarre, 1977). The catalyst for this spreading-out process is the introduction of an innovation in what is done or the way it is done. Such an innovation does not have to be something new. It may exist in other areas, and it can refer to tangible objects, like machines, or less tangible phenomena, like tourism (Potter et al, 1999; Sarre, 1977). The diffusion process involves both hierarchical and neighbourhood (contagion) effects (Abler, Adams and Gould, 1971; Brown, 1981).

In terms of hierarchical effects, Hägerstrand (1967) and Lutz (1986) argue that diffusion emerges at different levels. Hagerstrand defines these in terms of geographical areas such local, regional and international while Lutz argues in the more abstract terms of the upper elements and lower elements of the economic hierarchy. During diffusion through the hierarchy the receiving “population accepts externally invented and perfected cultural innovations that are not further improved upon locally during the course of their acceptance” (Hägerstrand, 1967:13). As a result social change in the structure and function of the social system is experienced, through the borrowing or adoption of cultural traits (Rogers, 1995). Thus, for

example, development for less developed countries, and their transition from tradition to modernity, is thought to involve a repetition of the Euro-American experience (Browett, 1980). Consequently, the diffusionist paradigm proposes that the only way to achieve development is through the elimination of the 'under-development' characteristics and the acquisition of characteristics already adopted by the more-developed regions (Browett, 1980; Oppermann and Chon, 1997).

In the case of neighbourhood diffusion, development is adopted by places geographically close to each other that are able to see the benefits of the adopted development (McCalla, 1990:123). A result of this, although it is not the only explanatory factor, is that tourism development tends not to be evenly spread throughout a country/region. Thus, for example, during the early stages of development, many tourist resorts are created in the vicinity of international airports (Britton, 1982; Oppermann, 1993; Pearce, 1987). Since most tourists arrive at an airport and most of the time international airports are close to the capital, early tourism developments take place in these areas, as happened in Dominica, where half of all accommodation establishments are in the capital, Rouseau (Weaver, 1991). As a result, as suggested earlier, development tends not to be evenly distributed and regional imbalances emerge. In addition, there also emerge disparities between socio-economic classes and elitist entrenchment because in every destination there are some individuals or institutions that decide first to produce tourist facilities. Local elites allied with, or in opposition to, foreign interests frequently become forces of change and form the appropriate organs of community participation for their own benefit (Andriotis, 2003b; Cardoso and Falleteo, 1977; Milne and Ateljevic, 2001). Once a small number of producers creates some facilities that are successful in attracting tourists, more individuals, usually located near existing producers, decide to adopt the innovation.

However, the results of diffusion do not appear immediately over the entire country or island, something that has been illustrated by Miossec (1977), who was among the first to develop a diffusionist model of tourism space, depicting the structural evolution of resorts across an island through time and space. There are areas where the results of diffusion emerge first, in others later, and in some never. As Friedmann (1973) and Potter et al (1999) suggest since the core dominates the periphery in economic, political and innovative functions, the results of diffusion in the core usually emerge first. On the other hand, the periphery is not a homogenous entity, and therefore, parts of it may differ in their potential for development. For example, peripheral areas located in close proximity to cities and airports may be upward transitional, although areas distant from the urban centres of economic activity, or with exceptionally traditional social norms, may be downward transitional (Brown, 1981:253).

### **The Dependency Paradigm**

While some researchers have viewed tourism from the diffusionist perspective others have based their work on the dependency paradigm. Such a perspective is often associated with the development of underdeveloped nations and islands in respect of tourism (Britton, 1982; 1989; Erisman, 1983; Lea, 1988; Milne, 1997; Wilkinson, 1987; 1997a). However it can be equally valid within nations in terms of centre-periphery power imbalances. Dependency theorists (e.g. Beckford, 1972; Frank, 1969) tend to focus mostly on whether dependency hinders economic growth and worsens inequality (Cheng, 1989:18). The term dependency, for

example, has been used to imply that tourism in less developed countries largely relies on demand from, and is organised from, developed countries (Mbaiwa, 2005:158). As a result any development is characterised by the nature of the relations between the developed and underdeveloped nations (Frank, 1979, Maxwell and Fernando, 1989). The underdeveloped nations depend on the goodwill of the trans-national corporations and the rich consumers of developed nations to keep on buying and selling their products. Therefore, multinationals dominate over the artisans, and imports over local production, and dependency dominates over self-reliance (George, 1985).

While economic growth has occurred in some countries of the periphery, such development has resulted in undesirable features that distinguish the periphery from the capitalist development in the core. The absence of sufficient capital, and the subsequent low investment and productivity, result in the periphery being trapped in a vicious circle of poverty (Myrdal, 1957, Potter et al, 1999). The peripheral tourism of under-developed nations/regions is controlled and exploited by 'the industrial core' that dominates their resources and their travel business. The production surplus does not in practice contribute to investment, but is more often transferred from periphery to centre through unequal exchange (Amin, 1976, Emmanuel, 1972). Thus, dependency as a process involves various phases over time. "A country initially falls into a state of dependency in one issue and that the subsystem interface can then facilitate a spill over effect which leads to dependency in other sectors as well" (Erisman, 1983:343).

Dependency in tourism has been illustrated by Britton's (1982) model of enclave tourism indicating that tourism in developing countries is spatially concentrated and organised in the developed nations (metropolises), usually a capital city, where the "headquarters of metropolitan tourism corporations and associated non-tourism companies are located" (Britton, 1982:341). Since metropolises are actually located within the principal tourist markets, and have direct contact with tourists, they dominate the major facets of the industry, such as technology, marketing, product pricing and design, and thus, they control the link in the tourist flow chain (Britton, 1989; IUOTO, 1976; Wilkinson, 1997b). As a result they exert their power via a chain of monopolistic and extractive exchanges (Simon and Ruccio, 1986). Foreign headquarters of the tourism-generating countries organise the package tour (transportation, accommodation and excursions), and therefore they control tourists' consumption by controlling tourist movements, to the relative exclusion of the local producers (Britton, 1982:346). Poverty and distorted development are exacerbated, as the only facet not controlled by foreign headquarters is some of the consumption patterns of tourists during their residence, for example items they purchase, entertainment, and other services. The outcome of this situation is low multiplier effects and a high leakage of a substantial portion of tourism earnings. This is due to the ownership of tourism businesses by foreigners, profit repatriation, the importation of goods and services, the employment of a foreign workforce, expatriate management, and changing consumption habits of the local population (Andriotis, 2003b; Brohman, 1996). As a result the structures of dependency are often cited as the main cause of underdevelopment (e.g. Frank, 1984).

A main characteristic of dependency is the interplay between internal and external structures (Palma, 1978). Given the difficulty of locals in financing development, the locus of control over the development process, and local resources,



shifts from the people that are most affected by development, the host community, to the tourism-generating countries. This has adverse effects on the environment, the society and the economy of the host destination (Hall, 1994; 1996). Local people find themselves “enmeshed in a globally integrated system of resource use over which they cannot exercise control” and they become “the targets of top-down decision-making by elitist bodies exogenous to the community” (Brohman, 1996:55). Also, the advanced nations, in their attempt to have easy access, and expropriate domestic resources, sometimes form alliances with domestic elites (Palma, 1978).

Dependency does not exist only between metropolitan and developing countries, but also within developing countries: between the more developed urban centres and the peripheral areas, as proposed by Britton (1982) in his structural model of tourism in developing countries. Tourism development does not develop in an empty space but usually develops in the capital and large urban centres with proximity to international airports. Companies located in the urban centres of developing countries have the financial ability and political support to invest in the peripheral areas (Potter et al, 1999). As a result, these companies control the industry of the periphery, reducing further the economic benefits to peripheral regions.

### **Applying the Approach - The Case Pattern of Tourism Development in Crete**

This section will set out the historical evidence about the development of tourism on Crete. This evidence will be used in the ‘matching theory and reality’ section that follows to identify the match between the diffusion and the dependency theories and the experience of Crete in terms of tourism development. In the text in this section the superscript numbers in brackets indicate the presence of specific evidence. This evidence consists of the variables/criteria identified during the literature review as being representative of the theory in terms of content, outputs or outcomes. This evidence is brought together in table 1.

### **The History of the Development of Tourism Accommodation on the Island**

Prior to the 1960s the early history of Cretan tourism was based on the spread out effect as small seaside villages in the north, such as Agios Nikolaos and Chersonissos, that were in close proximity to the urban centres<sup>(3)</sup> and the main ports of the island, started to attract the first excursionists. Visitation of other places, such as the villages of the interior and the south coast of the island was almost impossible because the poor road network posed hardships and hazards to the traveller.

During the 1960s hotel development took place due to the early laws that provided mostly market-led incentives, directed at increasing bed spaces and the construction of facilities demanded by the tourist market. The government’s involvement in the promotion of tourism came also in the form of the allocation of funds for organising and developing the industry, and for providing financial assistance to the private sector. The funds were distributed in the form of grants, interest-free subsidies, tax-exempt allowances, and extra depreciation. They enabled the construction of accommodation as well as any related facilities in coastal locations almost without limits (Andriotis, 2001; Papadopoulos, 1985).

As a result of the laws and incentives, the development during the 1960s consisted of a large number of accommodation establishments being built in the

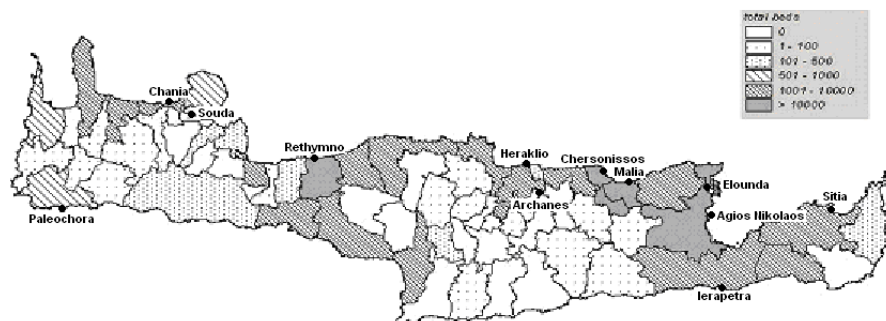
northern coastal areas to take advantage of sandy bays and proximity to the main urban centres and the airports. In Crete in 1962 there were 2,315 hotel beds available but only 950 were of an acceptable quality for international visitors. Nearly 60% of the 950 hotel beds were in Heraklio and its surroundings, 15% in Chania, 15% in Agios Nikolaos, and only 10% in Malia, Archanes, Souda, Ierapetra, Sitia and Paleochora (Glikson, 1965:154). By 1968, 41 hotels with modern facilities had been built adding 1615 beds to the existing capacity so that the total was 4,185 beds (Aetoudakis, 1968). Within this expansion of hotel accommodation the first resort hotel, Minos Beach in Elounda, was opened in 1963 and had a capacity of 100 beds. Later, Xenia, the first Greek state-owned hotel, was established in Heraklio by the Hellenic National Tourism Organization in 1965.

When the airport of Heraklio became international in 1971, and charter flights started to land, the mass organised tourists started a new era of commercialisation for Cretan tourism. Tourism in Crete was characterised by a rapid growth of tourist arrivals, increasing from 211,000 in 1973 to 728,000 in 1980, and slightly more than 2.5 million tourists in 2004. The upturn in arrivals encouraged hotel construction and the Government attempted to spread building activity towards under developed regions which had seen little development in the 1960s.

### The Pattern of the Supply Side - Tourism Enterprises on Crete

The present day spread of accommodation is uneven throughout Crete<sup>(8)</sup>, as shown in Figure 1. The major resort areas are centred on the Chersonissos-Malia coastal strip where there is intensive development. This coastal strip is in close proximity to the airport and the city of Heraklio<sup>(9)</sup>. These localities contain about 20% of Crete's licensed accommodation establishments (in total 277) and one quarter of its total bed capacity (in total 30,960 beds). In contrast, the South coast, with a share of only 2.3% of total rooms on the island, has seen only a modest amount of development<sup>(12)</sup> and much of the coast is largely the preserve of the Cretans (Andriotis, 2006).

Figure 1: Hotel beds by municipality (2006)



The pattern for accommodation enterprises is also mirrored by other tourism activities with the vast majority of the islands' tourist enterprises (95.6% of travel agencies, 96% of accommodation establishments, 99% of car rentals and 100% of bike rentals) being located in the coastal areas (Andriotis, 2006).

### **Influences on the Development of the Supply Side of the Tourism Industry on Crete**

The early, post World War 2, history of tourism development was based on the spread of tourism to small seaside villages close to urban areas<sup>(3)</sup>. Since these villages did not have any facilities for tourists, the locals started to accommodate them. For example, in relation to Rethymno, Papadaki-Tzedaki (1997) reported that during the 1960s, after a crisis in the oil and soap industry, a local elite consisting of oil-merchants and soap-makers turned their interest towards hotel construction. They were the first to realise tourism's potential in Rethymno and to invest in the tourism industry. Undoubtedly, their choice has changed the development process of the area because, although in other parts of the island foreign ownership is widespread, in the city of Rethymno the local elite<sup>(10)</sup> still owns five out of the six large hotel establishments and 25% of the hotel beds, although they own only 7.9% of the hotel units (Papadaki-Tzedaki, 1997). One of these elites is Nikos Daskalantonakis who today owns, jointly with TUI, the largest resort hotel chain in Greece. The local elite also played a significant role in the coastal village of Drethia (a pseudonym for a coastal community in Heraklio Prefecture). As reported by Kousis (1984:101-102) a retired mayor, coming from a higher status family started to accommodate in his coastal summerhouse the first tourists that made their appearance in Drethia, and later, when the influx of tourists increased, he transformed his house to accommodate them. This is the first tourist accommodation establishment on record in the area.

However, the more recent history of Cretan tourism displays a predominantly foreign pattern of ownership of hotels and many of the funds for developing the Cretan tourism industry have come from foreign companies<sup>(15)</sup>. As a Greek magazine reported, many German and American owned hotels are found in the areas of Malia and Chersonissos, although in East Crete French companies have invested in the island's tourism industry (Kritika Themata, 1977). Likewise, many coastal areas have been bought by companies that are typically controlled by Greeks, but the capital for the investments originated abroad (Politika Themata, 1975). For example, Kousis (1984: 92) reports that with the increasing prospects for tourist induced development in Drethia, outsiders started to buy land, occasionally being favoured by land expropriation. She estimates that in total 600 stremmata changed ownership between 1950 and 1982. Among the buyers the most important was G.T.T., a joint venture of a European multinational of hotels, a Greek bank and a Cretan businessman, that in 1972, started to operate a four star hotel in the area. According to the same author (Kousis, 1984) during the 1980s outsiders owned almost twice as many hotel beds as the locals. Today, value appreciation in tourist areas, frequently prohibits locals from acquiring land for tourism induced developments (Briassoulis, 2003: 110). However, given that those beds are found primarily in the more expensive units, these outsiders collect 79% of the total daily income from beds (Kousis, 1984:103).

Nowadays, foreign investors undertaking investment in the tourism industry of the island has increased and some of the non-Cretan owned hotel chains are

Louis, Aldemar, Mitisis, Capsis etc.<sup>(15)</sup>. For example, Loyalward Group PLC, Greece's biggest-ever UK investor, plans to build in Cavo Sidero, Sitia, a massive tourist complex with a total capacity of 7,000 beds and a budget of US\$ 1.4 million (€1.2 million). Even in the case of local owned hotels Briassoulis (2003) indicates that they have succumbed to globalisation and competition forces and have transferred their management to foreign multinationals.

In addition, the tour operators have influenced the supply side of Cretan tourism. First, they have sought to increase their control of the production chain through vertical integration. This vertical integration appears in the form of the ownership of hotels and travel agencies by tour operators. For example, the German tour operator TUI owns 50% of Grecotel, the largest hotel management company in Crete and Greece. Second, they constantly press Cretan tourism enterprises for lower prices through fierce negotiations prior to the signing of contracts. This negotiating power of tour operators, along with the limited use of alternative distribution channels, results in limited opportunities for tourism enterprises to achieve increased profit and return on investment.

Finally, for non-accommodation enterprises, the locals in Drethia, for example, control approximately 30% of the capital for tourist shops, although their share of the capital in non-tourist enterprises, mainly farms, is substantially higher (Kousis, 1984).

However, it is not only the non-Cretan private sector that has influenced the supply side on Crete. The non-Cretan public sector has also played a role. First, local government on Crete has been poorly funded and, as a consequence, their ability to influence the tourism industry generally, and the physical development of coastal resorts in particular, has been curtailed. Plans are usually formulated by experts located in Athens, the capital, and therefore they do not make sufficient room for the local needs<sup>(24)</sup>. As a result, policies frequently generate friction, and, sometimes, are withdrawn for revision shortly after being introduced (Anagnostopoulou, Arapis, Bouchy and Micha, 1996; Komilis, 1987; Spanou, 1998). Secondly, external support has had a positive effect on development, although the exact degree to which international organizations contributed to the development of the Cretan economy is difficult to estimate. For example, one of the first development studies concerning the island (Basil, 1964) was sponsored by the Organisation for Economic Co-operation and Development. Also, significant funds started flowing to the island, pushing its tourism industry forward, when Greece joined the European Union in 1981 (Briassoulis, 2003).

### **Influences on the Demand Side of the Tourism Industry on Crete**

Foreign dominance of the supply side of the tourism industry on Crete is mirrored by the demand side. Tour operators have played, and are continuing to play, a significant role in determining the nature and pattern of the tourism industry of Crete<sup>(16)</sup> by controlling the demand (Andriotis and Vaughan, 2004). The reason is quite simple. As Briassoulis (2003) has estimated, foreign tour operators control 70% of tourist beds through various arrangements<sup>(19)</sup>. These tour operators, from Western European countries, determine tourists' choice through advertising and promotion and because inclusive tour packages are organised exclusively in the origin countries (Andriotis, 2003c; 2003d; Andriotis and Vaughan, 2004).

## **Changing Economic Patterns on Crete**

The expansion of the island's tourism industry has resulted in changes in local economic activity, as Kousis (1989) found in Drethia. With the arrival of tourists, "the number of farmers decreased dramatically, while the number of small shopkeepers and wage earners increased considerably" (p.332). For example, although in 1961 the primary sector employed 70.9% of the Cretan population and the tertiary only 17.7, these proportions had changed by 2001 to 38% for the primary sector and 45% for the tertiary<sup>(14)</sup>.

Tourism evolution has resulted in the abandonment of traditional agricultural and craft-related occupations because tourism-related jobs were perceived as more attractive and generating higher income (Andriotis, 2003b). Professions, such as cobbler, tailor, dairyman and traditional coffee-house keeper have been replaced by modern ones<sup>(14)</sup>. Agriculture was the main economic activity in Crete before the introduction of tourism (Andriotis, 2003b; Kousis, 1984). Today, economic diversification is evident through the movement from the 'traditional' agrarian sector into the modern – tourism oriented - sector<sup>(14)</sup>. As a result, tourism, together with agriculture, is the island's largest earner of foreign exchange. This is backed up by official statistics which show that the gross regional product from the primary sector has declined from 33.2% in 1981 to 22% in 2001 while the contribution of the tertiary sector, of which tourism is the largest part, has increased from 46.6% in 1981 to 66% in 2001.

Contact with tourists has also influenced the consumption patterns of Cretans. Once contact with tourists developed, the local population started to demand imported products, previously consumed only by tourists<sup>(35)</sup>, and as a result, per capita consumption of local wine and raki (the local spirit) diminished and foreign/imported drinks, such as beer, whisky, and vodka have replaced them (Andriotis, 2003b; Moore, 1995; Wickens, 1994).

## **The Nature of the Tourism Industry on Crete**

Earlier the influence of foreigners on the supply and demand sides of tourism development in Crete was illustrated. As Briassoulis (2003) has indicated:

*Despite the significant contribution of local capital to vital economic sectors, foreign capital (private and EU) now plays an important role in the island's development. Foreign control of tourist flows, accommodation and services has intensified the unequal distribution of tourism benefits and the loss of self-reliance. This is more serious in areas where tourism is the only viable development alternative (p. 110).*

As noted by Briassoulis above, this influence has meant that tourism development on Crete depends significantly on non-local resources and influences<sup>(25)</sup> (Briassoulis, 2003:107). This weakens self-reliance and local control of development, and there is high leakage of money out of the local economy<sup>(34)</sup>, seriously reducing the industry's potential for generating net financial advantages for, and growth of, the local economy. Set out below are three illustrations.

First, as Andriotis (2002) reports for Crete, larger hospitality firms tend to import managerial labour<sup>(31)</sup> and to purchase supplies outside the local economy<sup>(29)</sup>. In addition, economic and political migrants from the Middle East, Balkans and

Eastern Europe are employed in the island's tourism industry<sup>(30)</sup>. As foreign workers often repatriate their salaries a proportion of earnings from the local tourism industry leaks out of the economy (Andriotis and Vaughan, 2004; Ankomah, 1991). This is vividly illustrated by Pettifer (1993) in relation to newcomer small tourism enterprise owners in Crete:

*Most of the newcomers are not Cretans but Athenians who move in for the summer, open a bar, make a great deal of money and then disappear back to Athens at the end of the season without paying any tax. When the construction boom slumps and building jobs go, little of the tourist money comes back to Crete. And the next year the Athenians return, bars open under new names to confuse the taxman and the whole cycle starts again (pp. 76-77).*

Second, while for 1997 it was estimated that on average each tourist spent 365,349 GRD on their holiday in Crete, approximately €1,072 (TEI, 1998), 42% of this expenditure, was paid to foreign tour operators for the purchase of the tourist package (transport and accommodation)<sup>(36)</sup>. Of the remaining 58%, 24% was spent on shopping, 17% on catering, 12% on local transportation and 5% on services (TEI 1998). As a result, foreign tour operators kept a high share of tourist consumption<sup>(38)</sup>. In addition, metropolitan tourism companies play a crucial role in the island's tourism industry because they also control/influence tourist movement, as explained earlier.

Third, local newspapers frequently present evidence of where the needs of the tour operators have over-ridden the wishes of the local population. For example, various articles in the Patris newspaper (2002) report that local shopkeepers complain that the type of all-inclusive holidays promoted by tour operators encourages visitors to remain within the hotel boundaries and seeks to internalise visitor expenditures within the hotel boundaries. In addition, upscale hotel owners are frequently forced to reduce prices from year to year, a reduction frequently exceeding 5%, in order to persuade tour operators to sign allotments with their establishments. As a result, many small hotels, owned by locals, are forced to remain closed, since tourists prefer larger and higher-class establishments that provide more facilities at low prices. In effect, such is the level of dependence/dominance that the wishes of tour operators have taken precedence.

## **Matching Theory and Reality**

This paper has been concerned so far with setting the base for pattern matching by describing two tourism development theories and the history and nature of tourism on Crete. To identify whether the theory and evidence provided for Crete match, tables 2 and 3 present selected attributes for both development theories presented in this paper and identifies whether these attributes are present or not in the data in the case of Crete. The attributes are taken from the earlier description of the theories (Britton, 1982; 1989; Erisman, 1983; Oppermann, 1993; Pearce, 1987; Britton, 1982; Lea, 1988; Milne, 1997; Wilkinson, 1987; 1997a) and have been divided into three broad groupings based on soft systems theory as described earlier.

Table 2. The diffusionist paradigm

Characteristic	Evidence Number	
	Not present	Present
Content		
The introduction of an innovation	1	
Catalyst through hierarchical diffusion – e.g. geographic levels	2	
Catalyst through Neighbourhood (contagion) diffusion – areas close to each other		3
Existence of change agents – individuals, organisations or institutions	4	
Copying of the innovators	5	
Local population accepts/does not modify externally generated change	6	
Outputs		
Results of diffusion usually emerges in the core first	7	
Development is not evenly distributed		8
Tourist resorts are usually created in the vicinity of international airports		9
Local elites become forces of change		10
Outcomes		
Disparities between socio-economic classes	11	
Regional imbalances		12
Social change results from the borrowing or adoption of cultural traits	13	
Transition from tradition to modernity – agriculture to tertiary		14

Table 3. The dependency paradigm

Characteristic	Evidence Number	
	Not present	Present
Content		
Ownership of tourism businesses by foreigners		15
Multinationals dominate over the artisans		16
Imports dominate over local production	17	
Dependency dominates over self-reliance	18	
Core dominates the tourist flow chain		19
Top-down decision-making by elitist bodies exogenous to the community	20	
Core controls tourists' consumption by controlling tourist movements	21	
Difficulty of locals in financing development	22	
The core forms alliances with periphery elites	23	
Core controls the development process		24
Output		
Dependency between metropolitan and developing countries		25
Dependency between the more developed urban centres and the peripheral areas	26	
The relative exclusion of the local producers	27	
Profit repatriation		28
The importation of goods and services		29
The employment of a foreign workforce		30
Expatriate management		31
Absence of local capital, and the subsequent low investment and productivity	32	
Outcome		
Periphery being trapped in a vicious circle of poverty	33	
Low multiplier effects		34
Changing consumption habits of the local population		35
The production surplus (profit, wages) often transferred from periphery to core		36
Adverse effects on the environment, the society and the economy of periphery	37	
Periphery has reduced economic benefits.		38

Diffusion theory is about the spread of physical development, or of ideas, through a community or geographical area. This spread is based on the awareness of new things that can be done, or of new ways of doing things, and the adoption of those new ideas. From the diffusionist perspective some of the attributes identified as present appear to confirm the theory. First, tourism has spread within various locations of the island and there was a kind of neighborhood effect. Second, the local elite's contribution to the evolution of the island's tourism industry was evident and they still control some facets of the Cretan tourism industry. Third, regional imbalances exist with most tourist activity concentrated on the North coast and in



the vicinity of cities and airports. Finally, there was a movement from the 'traditional' agricultural sector into the modern tourism oriented sector.

Dependency theory is about unequal relations between geographical areas, be that between countries or between regions within countries. This is often expressed in terms of core, semi-periphery and periphery designations. These inequalities manifest themselves in terms of resources, trading relationships, access to financial resources and the control of economic activity (Knox and Agnew, 1998:62) and limit the scope for the 'host' community to benefit fully from tourism. From the dependency perspective the evidence from Crete suggests confirmation of development theory in the selected attributes. First, metropolitan corporations in the form of tour operators dominate the island's tourism industry. Second, the island's core controls the periphery, since companies located in the urban centres of the island, mainly in Heraklio, the largest city of the island, control the peripheral areas tourism industry, mainly mass developed coastal resorts. In contrast, in areas where the industry is in the form of rented rooms it is controlled by locals. Third, although the tourist multiplier has not been calculated for the island, it is estimated (Andriotis, 2002) that the multiplier effects are low since foreign tour operators keep for their own benefit the highest share of tourist consumption, there is high leakage of money from imports and income repatriation, and, as a result, tourism has been weakly integrated in the local economy. Finally, although the evidence is limited, it is clear that foreign ownership is, and has been, a vital force of the development of Cretan tourism industry.

## **Evaluating the Method**

This paper has been concerned so far with development theory, reality and their matching. This section will evaluate the pattern matching approach, highlighting its methodological shortcomings/questions.

### **The Process of Pattern Matching**

The process of pattern matching is deceptively appealing in its simplicity. First, the main elements of the theory are identified: the theoretical pattern. Second, data are collected about the 'phenomena/case' in question: the case pattern. Finally, the data are compared against the theory to see if they support or contradict the theory. However, the devil is in the detail in terms of the validity and reproducibility of the evaluation

### **The Content of Pattern Matching**

The first potential content difficulty is in identifying the theoretical pattern. As indicated earlier, this identification is undertaken by the researcher who identifies the criteria used to benchmark tourism development theory from the literature on the various theories. The issue in this is that different researchers may interpret the literature in different ways. In the case of this paper the benchmark criteria were identified from the commentary given earlier which represented the authors' summation of the literature. Thus there is the distinct possibility of researcher bias in the selection of the benchmark criteria: both by design and by omission.

The second potential content difficulty is that there are no clear methods for selecting the data for the case study and the required data may be missing or biased. More importantly, the subjective position of the researcher may affect the pattern-matching approach process when making claims about the area/theory under study.

Thus, as with the selection of the attributes/benchmark criteria, the selection of the empirical evidence is more open to researcher bias than may be suspected at first.

The third potential content difficulty is associated with the use of secondary data. Secondary sources used in writing the case study are fraught with problems concerning the authenticity, purpose, representation of the material, and the particular methods used (Berringer 1978; Towner 1988:48). As a result Towner (1988) asserts that although “the collection and analysis of historical data may be sound, the final conclusions will rest on assumptions about the adequacy of the original material” (p.51). Thus, for example, the secondary data sources used in this paper were written for purposes that are not necessarily appropriate to the aims of the current paper; a situation that is likely to be more rather than less common. Thus, the secondary data collected frequently contained relatively high margins of error and inaccuracy, e.g. statistics for tourist arrivals varied between different sources and as a result the dependability of the data was limited.

The fourth potential content difficulty is one of looking at the case data and inferring from it something that may or may not be true but which is, at face value, supportive of the theory. One such case in this paper is the discussion on the the location of tourism development on Crete being concentrated in the North with only limited development in the South. The question is whether this is because of the process of diffusion or because there is much less in the South of the island that is attractive to tourists such as beaches or heritage attractions.

### **The Output of Pattern Matching Analysis**

Pattern matching is based the matching of the ‘predictions’ of the theories with the ‘reality’ of the case study evidence. However, there are issues in how this is done. In this paper it has been done through the simple procedure of counting occurrences. But how much weight should be given to the different benchmark criteria identified? As noted earlier content components (why and how development was happening) were much less frequently identified in the theoretic literature, and in the case study material, than the other two components, outputs and outcomes. Perhaps this was because the latter are more readily identifiable, more easily measurable and more likely to be the focus of comment in both academic and non academic commentaries. However, this could lead to the whole exercise being invalid if only simple counting is undertaken. But, if not simple counting, then there is again the distinct possibility of researcher bias entering the evaluation.

### **Outcome of Pattern Matching**

The matching of the ‘predictions’ of the theories with the ‘reality’ of the case study evidence in this paper presents difficulties in claiming generalisations. This is because dependency theory was evident through just over half of the attributes (13 out of 24) being identifiable while the diffusion predictions were less commonly identifiable in the evidence from the case study (6 out of 14). In addition, deviations between theory and case patterns were more frequent in the content component with the implications identified in the paragraph above.

### **Conclusion**

The overall aim of the paper was to examine the pattern matching approach. Within this, the paper had three objectives. The first objective was, to set out the nature of the pattern matching approach. The second objective was to illustrate the

application of the pattern matching approach, in an exploratory way. The third objective was to evaluate the approach based on the evidence of the exploratory application.

On the basis of the work conducted in order to meet those three objectives, the overall conclusion of the paper is that the pattern-matching approach appears, on the surface, to be a simple and transparent method that is at face value attractive and necessary in order to examine whether empirical evidence is in accord with the explanations offered by tourism development theories. However the application of this method revealed methodological shortcomings associated with defining the benchmarking criteria, the use of historical and secondary data and the interpretation of such empirical evidence. The main problem faced in this exploratory application of the procedure, as for any similar application, was that not all the secondary data required was necessarily available nor, if it was available, was it necessarily in the form and detail, or from the types of sources, that would have been preferable. As a result reliability of data, and by implication validity of the inferences, was not easy to control and nor will it be for those seeking to undertake a similar exercise.

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