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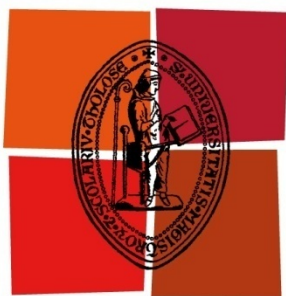
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de Toulouse

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(TECHNOLOGY AND INTERNATIONAL SPECIALISATION IN TOURISM)**

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TECHNOLOGY AND INTERNATIONAL SPECIALISATION IN TOURISM

ABSTRACT

This research examines the importance of technological factors in international tourism specialisation. The test application consists in finding tourism data related to technology, as well as in synthesising the correlation between tourism and technological factors which appear in *domestic tourism expenditures, visitor exports, tourism investment, and expenditures on research and development (R&D)* in order to compare their proportions between 2000 and 2010 and analysed the information by country group classification (Advanced countries, Developing countries, and Least Developed countries). The results show that tourism investment and R&D are significant factors in enhancing the tourism receipts of a country. This interpretation relates more precisely to Vernon's "Product Life Cycle" theory which has proven to be a highly demonstrative tool as to the advantages of level technology in terms of added value in product quality and product development. The theory of Demand of Linder is also concerned in order to enhance each other between domestic and international tourism specialisation. It was found that most countries in the advanced group display a solid technological sector and an innovating economy as well as the data on R&D expenditures are mainly allocated in advanced country groups; this fact also influences the quality of tourism development in the long term. In developing countries, the domestic expenditures have shown stronger than visitor exports in countries with large population. The high population in the country reflects the size of its domestic market. In contrast, the proportion of visitor export is higher than domestic expenditures in the tourism destination countries; these country groups attract international tourists. The potential of expenditures by local populations in LDC countries is also weak, it obviously affects to the ratio of both domestic and international expenditures. The theories of Heckscher&Ohlin, Comparative advantage, and/or Absolute Advantage can be considered for LDC countries, they should take advantage of being tourist destination countries by applying the technology concerned to maintain the destination. Not only would this allocate physical capital but it would also enable them to invest in human resources (education, training, knowhow, and knowledge).

Keywords: Technological factors, international tourism specialisation, tourism expenditures, tourism investment

TECHNOLOGIE ET SPECIALISATION INTERNATIONALE TOURISTIQUE

RESUME

Cette recherche a pour objet d'examiner l'importance des facteurs technologiques dans la spécialisation internationale touristique. Le test consiste, à partir des données liées au tourisme et à la technologie, à synthétiser la corrélation existante entre tourisme et facteurs technologiques dans les dépenses du tourisme domestique et international, l'investissement touristique et les dépenses en recherche et développement (R&D), à partir d'une analyse comparative de données de 2000 à 2010, en fonction d'une classification des pays par groupes (Pays avancés, pays en voie de développement, et pays moins avancés). Les résultats ont montré que l'investissement touristique et la dépense de R&D sont des facteurs significatifs en terme d'augmentation des recettes touristiques d'un pays. Cette interprétation, mise en évidence par la théorie de « cycle de vie du produit » de Vernon, s'est avérée être un outil fortement démonstratif quant aux avantages du niveau technologique dans la valeur ajoutée dans la qualité et le développement d'un produit. Par ailleurs, la théorie de la demande de Linder est également concernée, notamment pour déterminer la spécialisation du tourisme domestique et international. On a constaté que la plupart des pays avancés ont un secteur technologique performant et une économie d'innovation qui soutient un fort développement du tourisme. Il est évident que si les données de dépenses de R&D sont principalement présentes dans les groupes de pays avancés; cet élément influence également la qualité du développement de tourisme à long terme. Dans les pays en voie de développement, caractérisés par des populations importantes, les dépenses du tourisme domestique sont plus fortes que des dépenses du tourisme international, la population reflétant par ailleurs la taille de son marché intérieur. En revanche, la proportion des dépenses touristiques internationales est plus importante que celle des dépenses touristiques domestiques dans les pays considérés comme destination touristique à part entière. Par conséquent, ces groupes de pays attirent les touristes internationaux. Le potentiel de dépenses par les populations locales dans les pays moins avancés est également faible. En conséquence, il affecte la proportion du ratio entre dépenses domestiques et internationales. Cependant, les théories des avantages comparatifs d'Hechscher & Ohlin, et/ou des avantages absolus peuvent être ici considérées pour les pays moins avancés. Ils sont en effet un avantage pour ces destinations touristiques, qui pourraient permettre, en appliquant les technologies concernées, de maintenir la compétitivité de la destination touristique. Ceci concernerait non seulement les capitaux physiques mais il leur permettrait également d'investir dans les ressources humaines (éducation, formation, savoir-faire, et connaissance).

Mots-clés: Facteurs technologiques, spécialisation internationale touristique, dépenses touristiques, investissement touristique

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International tourism represents today an important role in the economic sector. International tourist flows are also one of the most dynamic elements of the international economic exchanges. The evaluation of tourist flows requires the adoption of precise definitions and the application of rigorous methods of statistical measurement which remain too often insufficient in many countries.

According to SCHUMPETER (1993), new approach emerged in the 1980s led to a vision of international tourism-based technological change. This current leaned on the conditions for the emergence of the process of innovation through technological paradigm and path concepts. This approach helped to break with the conventional approach of technical change. Technology is regarded as an exogenous variable or as a public good with cost distribution almost zero. Innovation, until then parsed as a result conditioned by specific structures of market, then enrolled in a complex, dynamic and cumulative process. Ten years later, it can be observed on different markets in developing the rise of many products, including those with high technological intensity. Each country could take a position in these areas, where the international application is very strong, there are significant productivity gains and specialisation in assembly exists. Here intensive work and comparative advantage activities are possible.

Trade policy has contributed to the rapid growth of highly competitive industries incorporated into international circuit exchanges of high-tech products and dominated by foreign companies. Also, the tourism sector is presented as an economic activity linked to international specialisation. Tourism has experienced very strong growth since 1970: the number of arrivals of international tourists has increased 165 million in 1970 to 808 million in 2005 and is expected to rise to approximately 1,600 million by 2020, which will benefit tourism development of all tourist regions. In developing countries, promotion of specialisation based on the export of tourism and services concerned, such as air transport, can be observed. But each international specialisation also requires large tourist revenue flows to generate equity.

To ensure that tourism moves in the proper direction and does not threaten the quality of economic, environmental, social, and cultural aspects of the tourist countries, the governments and the other partners in the field of the development of tourism must adapt the strategies of development to reinforce the concept of sustainable tourism in the process of technology. Reinforcement of the capacity of technology established one of the major aspects of the installation of a better partnership in the activities of international tourism.

Tourism investment relates to improving tourism innovation and technology, products and marketing, and development of infrastructure sectors. Technology development includes the creation of new products, new production processes, and new raw materials to meet customer satisfaction. This must also include import know-how and infrastructure from developed countries to facilitate the flow of tourists.

In 2009, the TOUREG Project report¹ noted that it should be well understood that the tourism industry does not invest intensively in Research and Development (R&D), it rather counts on technology supply. For example, business in Balearic Islands in Spain has reported R&D expenditure in innovation efforts of only 0.36% (Martinez-Roz & Orfila-Sintes, cited in Toureg, 2009)². Innovation in tourism industry is thus driven by suppliers of technology and of innovative products and certainly by governmental financial support.

The challenge facing companies resides in their capacity to absorb technology and innovative products and make optimal use of them. In other words, it actually turns out to be a problem of internal training and absorption capacity of the firm. The positive aspect is that the tourism industry is information intensive and hence owners and managers are open to possible solutions with IT investments and in particular when they are packaged as integrated solutions.

¹TOUREG, *Global SWOT Analysis*. Department of Tourism Management of the Alexander Technological Educational Institute of Thessaloniki, Greece and the Technical University of Crete, Greece. October 2009 p 47

²MARTINEZ-ROZ & ORFILA-SINTES, 2009, cited in TOUREG, *Global SWOT Analysis*. Department of Tourism Management of the Alexander Technological Educational Institute of Thessaloniki, Greece and the Technical University of Crete, Greece. October 2009 p 47-49

Significantly, ICT can have great impact on cultural tourism, a market-share development strategy that focuses on promoting the unique cultural aspects of a city or region in order to draw tourists interested in those particular cultural subjects to the area. Action in the field of ICT for tourism is targeted at developing new components and distributed architectures for tourism information and communications systems that support users and businesses, by offering value added services and multimedia information on accommodation, events, culture and leisure, together with booking and payment facilities³.

Therefore, it is an interesting question of seeking the importance of technological roles in tourism sectors as well as the means of increasing their profitability in tourism organisations and/or countries, because the economic and commercial factors are fundamental regarding the balance between populations in the countries.

Applications and Hypothesis

Under the term of tourism economy activity, the researcher has the following assumptions;

- Is the Technological factor important or does it simply explain the process of international specialisation in tourism?.
- Tourism investment and research and development are the fundamental sources of technology growth.
- The capacity reinforcement of the technology can establish a better partnership in international tourism specialisation.

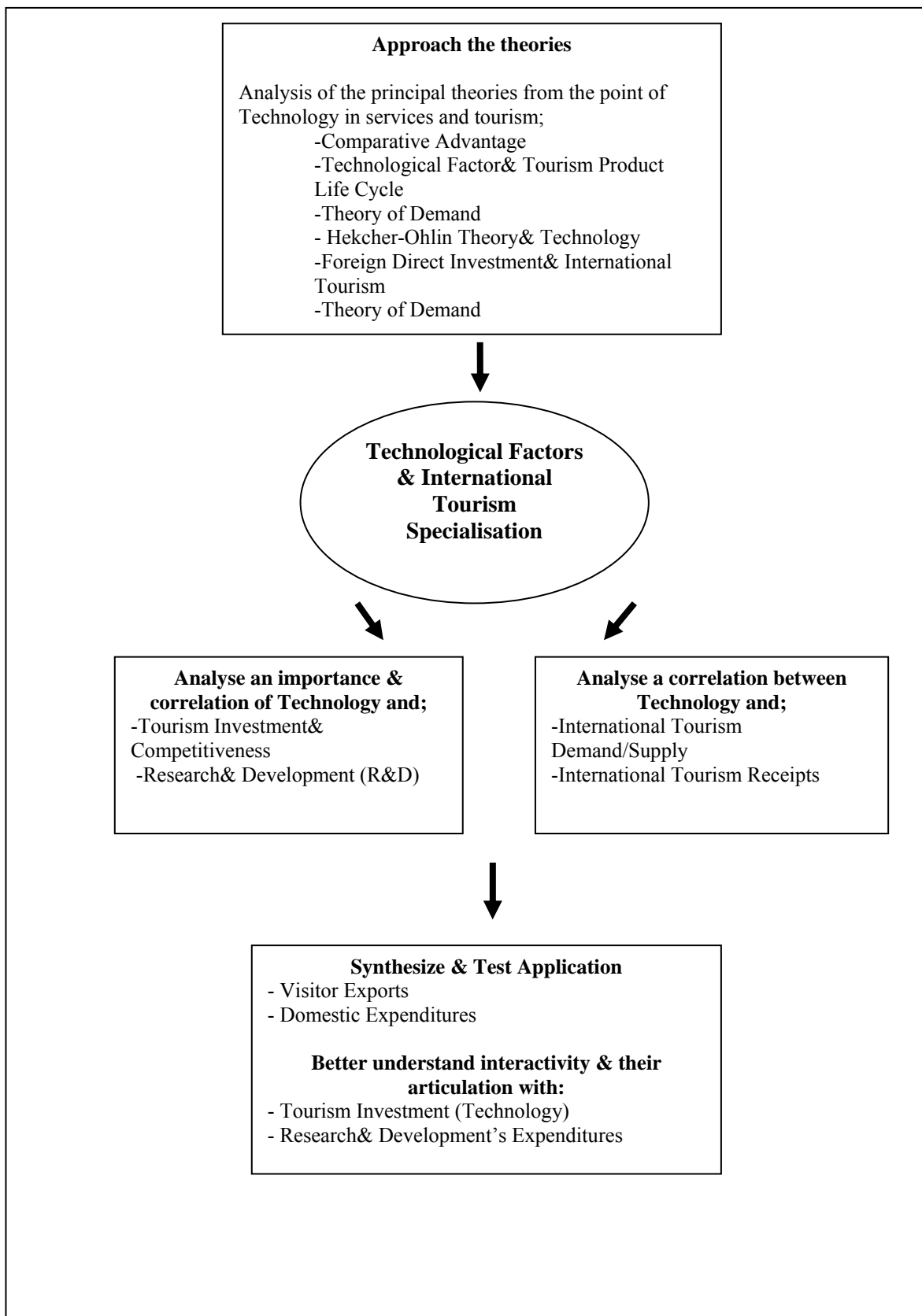
³ RONCHI(A.M.), *eCulture, Cultural Content in the Digital Age*, Springer, 2009

Objectives

This research concentrates on the importance of technological factors in international tourism specialisation.

- To study the empirical research and tourism literature as well as to criticise the tourism and economy theories that associated with technologies and international specialisation in tourism and service sectors
- To classify and evaluate the characteristics of the countries as well as to assure the correlation between an influence of country classification and the level of technology in tourism.
- To synthesize the interaction between tourism technology investment and tourism expenditures from both international and domestic point of views that involves the generation profitability of the country.
- To test the importance of technology by applying it with tourism investment/ domestic expenditures and visitor exports and then to interpret the results that correspond with technological factors.

Conceptual Framework of Research



Methodology

According to the methodologies of research, the research will use the sources and collection of the documents by research and the reports/ratios concerned, of the data bases including statistics. Moreover, the objective of research is to study the importance of international specialisation in the tourism sectors. Therefore, the type of method used will be a quantitative of the statistics by testing domestic expenditures and visitor exports of the countries compared to tourism investment by differentiates data from the years of 2000 and 2010.

Moreover, it is a specific analysis of the importance of technology; a qualitative method would be applied by using the case of country classification groups. These tests are also to assure the correlation between influences of country classification and the level of technology in tourism which will enable the the proper results of the research to be reached.

PART I: AN ANALYSIS OF THE CONCEPT OF TECHNOLOGY IN TOURISM

PART I: AN ANALYSIS OF THE CONCEPT OF TECHNOLOGY IN TOURISM

Tourism Technology is a term that encompasses all social, cultural, managerial, and value adding activities of the tourism industry. Tourism Technology also incorporates and encourages technological advancements and economic development in the tourism industry.

The importance of Information Communication and Technology (ICT) in tourism has significantly increased and will keep increasing in the future. However, since technology has now become available to almost everyone, it no longer in itself brings a competitive advantage. The integration of IT into organisation is an important key to success. Integration means technology, advertising strategy and overall organisational mission or goals to achieve efficiency. Traditional advertising strategies should be added a certain availability, interactivity, and be coupled with the research capacities offered by technology, and the fact that the present day business environment is changing rapidly should also be taken into account.

Various high-tech information and communication technologies are in use in the tourism sector around the world. They are used for tourism product development, marketing distribution and training of tourism sector personnel. These technologies play a significant role in the process of finding out and satisfying the ever-changing demand for tourism products.

This part will discuss the concept and terms of tourism and technology, the characteristics of tourism and technology in chapter 1 as well as the various channels of knowledge of the tourism industry and benefits of technology in tourism in chapter 2.

CHAPTER 1: TERMS RELATED TO THE TOURISM SECTOR AND TECHNOLOGY

1.1 Defining Tourism

This research will focus on international tourism and its impact on global economy. Economic statistics indeed show that international specialisation in the tourism sector influences the global market by being a consistent source of income for countries. Tourism comprises the ideas and opinions which make people shape their decisions about going on trips, about where to go and where not to go, about what to do or what not to do, about how they relate to other tourists, or to local and service personnel. Tourism includes all the behavioural manifestations of those ideas and opinions⁴.

In an other perspective, Hunziker&Krapf, cited in Burkart&Medlik⁵ presented tourism as being the complex of phenomena and relationships arising from the acts of travelling and staying in a place, performed by non-residents, in so far as they do not lead to permanent residency and are not linked with any income earning activity.

According to the Department of Economic and Social Affairs, UN (2008)⁶, when referring to a specific country of reference, it is recommended that the following three basic forms of tourism be distinguished:

(a) **Domestic tourism**, which comprises the activities of a resident visitor within the country of reference either as part of a domestic tourism trip or part of an outbound tourism trip.

(b) **Inbound tourism**, which comprises the activities of a non-resident visitor within the country of reference on an inbound tourism trip.

(c) **Outbound tourism**, which comprises the activities of a resident visitor outside the country of reference, either as part of an outbound tourism trip or as part of a domestic tourism trip.

⁴LEIPER, N., 1995. *Tourism management*. RMIT Press: Melbourne, Australia.

⁵BURKARDT, A, J., & MEDLIK, S., *Tourism: past, present, future*. Heinemann: London, 1974.

⁶UNITED NATION, DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS. *International recommendation for tourism statistics 2008*, United Nation: New York, 2010.

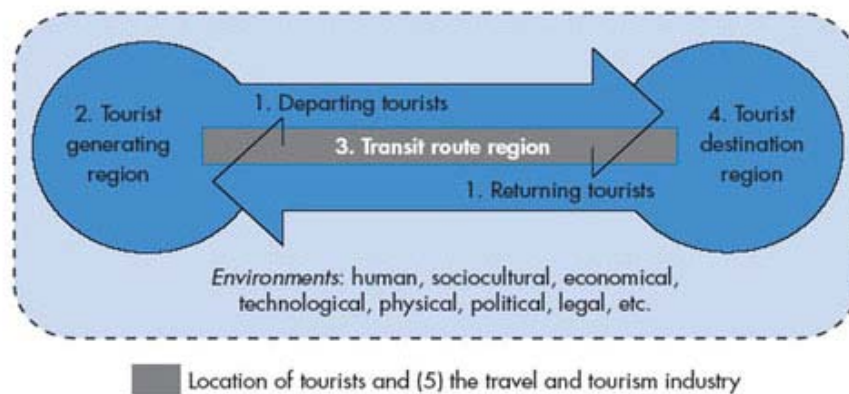
The three basic forms of tourism set forth above can be combined in various ways to derive other forms of tourism, in which case the following definitions should be used:

(a) **Internal tourism**, which comprises domestic tourism and inbound tourism, that is, the activities of resident and non-resident visitors within the country of reference as part of domestic or international tourism trips.

(b) **National tourism**, which comprises domestic tourism and outbound tourism, that is, the activities of resident visitors within and outside the country of reference, either as part of domestic or outbound tourism trips.

(c) **International tourism**, which comprises inbound tourism and outbound tourism, that is, the activities of resident visitors outside the country of reference, either as part of domestic or outbound tourism trips and the activities of non-resident visitors within the country of reference on inbound tourism trips.

In addition to those definitions, tourism can be included in a broader network supporting the activities of tourists travelling away from their normal residences to visit other regions or other countries: tourist generating regions (TGR), transit routes (TR), tourist destination regions (TDR), and the global tourism industry as being the backbone of these activities (Leiper,1995).



TGR: Tourist Generating Region
TR: Transit Route
TDR: Tourist Destination Region

Figure 1.: Tourism System of LEIPER (1995)

1.1.1 Definition of a Tourist

The popular definition of a tourist would consist in any one involved in activities related to the traditional image of a tourist, which is a person involved in sightseeing, picture taking, etc.

The Bureau of Tourism Research (1991)⁷ gave a more technical definition of tourists. On one hand, domestic tourists are people staying away from their home but within the borders of their country of residence for at least one night but no longer than three months, and who had to travel over a distance of at least 40 kilometres away from their home. On the other hand, International tourists are defined as temporary visitors staying for at least 24 hours in a country where the purpose of their journey is either leisure or business. Many tourists spend their time at leisure, since holiday is the most common purpose for overnight trips in many parts of the world.

It is also agreed that the definition of a tourist should involve a certain kind of behaviour which consists in the search of leisure experiences and of interactions with the features or characteristics of the place of destination.

Leiper (1995)⁸ defined tourists as being a subset of travellers and visitors. He identified the fact that the word 'tourist' is used in order to classify an apparent traveller or visitor. Three types of meanings to the word "tourist" can therefore be brought to light: the popular conception of tourists, the more technical definitions, and all the heuristic concepts and definitions related to this category of people.

For statistical purposes, the term visitor describes any person visiting a country other than that in which they have their usual place of residence, for any reason other than following an occupation remunerated from within the country visited. This definition covers:

- International Tourists: temporary visitors staying at least 24 hours in the country whose purpose of journey can be classified under one of the following heading:

- a) Leisure (recreation, holiday, study, religion and sport) or
- b) Business (family, mission, meeting)

⁷BUREAU OF TOURISM RESEARCH, *Australian Tourism Trends*. BRT: Canberra, 1991.

⁸LEIPER, N., 1995. *Tourism management*, RMIT Press: Melbourne, Australia.

- Excursionist: temporary visitors staying less than 24 hours, including passengers on cruise ship.

1.1.2 Characteristics of Tourism

Tourism has unique characteristics that differentiate it from other industries. Unlike other industries that have their own distinct products or services, tourism usually includes multiple products or services, which involve the co-operation of several suppliers. As Seaton and Bennett (1996)⁹ noted, “Tourism is not a homogeneous market, say, for breakfast cereals, cars or cat food, it is a heterogeneous sector which consists of several product fields, although ones which have a degree of linkage”. Like other fields, tourism involves both goods and services, but the service component is much more important compared to these other fields. Services have some characteristics that are different from goods:

- Compared to goods, services are intangible. Services do not deliver objects to consumers, but rather, they deliver performances.
- Service delivery may not be consistent across individuals, time and situations. Despite the fact that the core product offered by airlines is transportation, services from one airline are likely to be different from services offered by others. Even within the same airline services performed by each individual staff member are likely to be different from each other. It is also possible that services performed by the same individual may be different from day to day. Thus, service delivery is heterogeneous.
- Service production is inseparable from service consumption. During the visit to a tourist attraction, services are delivered to visitors while visitors also consume them at the same time.

⁹SEATON (A.V) & BENNETT (M), *Marketing Tourism Products: Concepts Issues and Cases*, International Thomson Business Press, 1996.

1.1.3. International and domestic visitors

- International visitors

International travel consists of both inbound and outbound travel, and refers to situations in which the country of residence of the traveller is different from the country or countries visited. Those who undertake international travel will be considered as international travellers. From the perspective of the country of reference, international travellers are either inbound or outbound travellers¹⁰.

An international traveller qualifies as an international visitor with respect to the country of reference if:

- he/she is on a tourism trip and
- he/she is a non-resident travelling in the country of reference or a resident travelling outside of it.

Therefore, among international travellers arriving at the border, it is possible to define two categories: that of international visitors (returning outbound visitors in the case of residents or arriving inbound visitors in the case of non-residents) and that of other international travellers who are not included in tourism.

International visitors are characterised by the main purpose of their trip, whereas other international travellers are characterised by the reason for which they are excluded from visitors: either (a) being in an employer-employee relationship (border, seasonal and other short-term workers) or (b) being within the usual environment (all other situations).

A special mention needs to be made regarding individuals who are changing their country of residence: they should not be included in tourism. In principle, this refers both to those proceeding legally and to those proceeding without legal permit, although it has to be recognized that it is almost always impossible to identify the latter.

According to balance of payments and national accounts principles, diplomats, consular staff, military personnel of foreign Governments (other than locally engaged staff), as well as accompanying or joining dependants, are deemed not to enter the economic territory of

¹⁰UNITED NATION, DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS, *International recommendation for tourism statistics 2008*, United Nation: New York, 2010.

the country in which they are stationed, as they are considered to be residents of the extraterritorial enclave that is part of the territory of the country they represent. As a consequence, they are not counted as visitors to the country in which they are stationed.

In the cases of nomads and refugees, special considerations apply. For nomads, by convention, all places they visit are part of their usual environment so that beyond the difficulty in certain cases of determining their country of residence, they are not visitors. For refugees or displaced persons with no place of usual residence, their place of stay is considered to be their usual environment, so they are not visitors either.

Figure 2 below illustrates the classification of inbound travellers to the reference country as inbound visitors and other inbound travellers. Inbound visitors are classified either as tourists or excursionists; tourists are further classified as nationals residing abroad but visiting the reference country and other non-residents visiting the reference country, and finally all inbound visitors are classified according to the main purpose of trip.

-Domestic visitors

From the perspective of the country of reference, a domestic traveller qualifies as a domestic visitor if:

- (a) he/she is on a tourism trip and/or
- (b) he/she is a resident travelling in the country of reference.

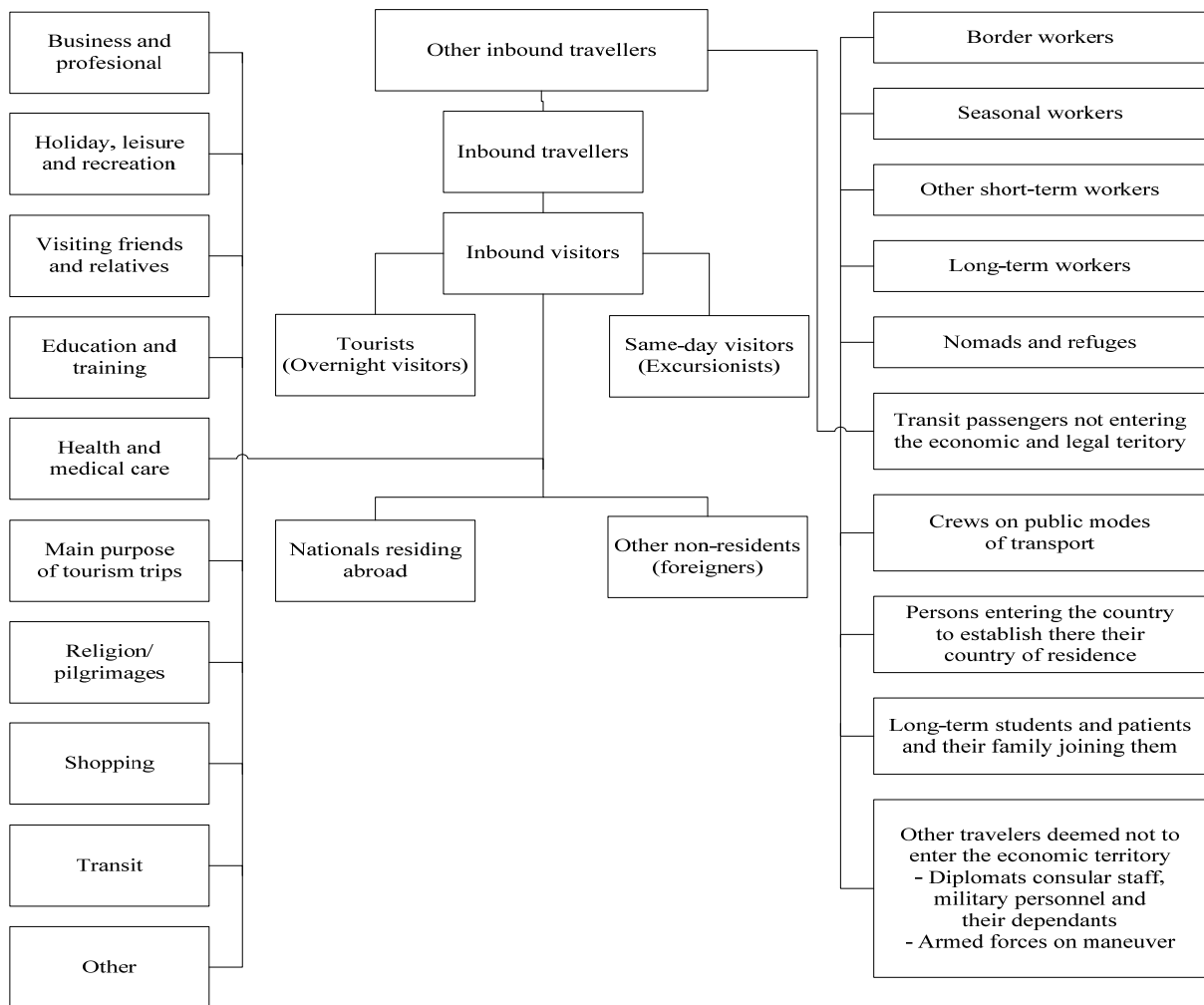


Figure 2: Classification of Inbound Travellers
Source: Department of Economic and Social Affairs, UN (2008)

1.1.4. Purpose of Visit

The main aim of tourism statistics is to identify visitors from other subsets of travellers. For this purpose, some categories of non-resident travellers are especially relevant for compilers and for analysis:

- Nationals residing abroad
- Transit passengers
- Crews
- Cruise ship passengers and yachters
- Frequent border crossers
- Students

- Patients
- Business and professionals visitors

Figure 3 below illustrates the different categories of visitors and other travellers that can be identified at international borders upon arrival: some of them are non-resident and some resident. Finally, nomads and refugees have a special status and are treated separately.



Figure 3 : Relationship between international arrivals and different categories of visitors and other travellers

Source: Department of Economic and Social Affairs, UN (2008)

Nationals residing abroad: Because immigration authorities are often not interested in collecting information on this group of non-residents entering the country, some countries exclude those presenting a national passport or a national identification card from the obligation of filing entry/departure cards. However, these persons are non-residents with respect to the country of reference and should be included in the scope of non-resident travellers. If relevant, the subset of visitors among these travellers could be shown separately for analytical purposes.

Transit passengers: In principle, only those persons making a stop and entering the legal and economic territory should be considered as visitors and their purpose of trip should be transit. Those who do not stay overnight in the country visited should be considered as excursionists, while all those spending at least a night in the country visited should be considered as tourists

Crews on public mode of transport, either regular or irregular, should be considered as within their usual environment and thus excluded from visitors. Crews on private mode of transport (corporate jet, yacht, etc.) are considered as visitors.

For some countries, **cruise ship passengers and yachters** represent a significant tourism market. Because of the required consistency of the notions of residence and economic territory with those used in the national accounts and balance of payments their treatment in tourism statistics will depend upon the application of these concepts to the cruise ship on which they arrive and leave.

Frequent border-crossers: For countries having a land border and where, for a variety of reasons, including family visits, work opportunities, shopping on own account, or for business, etc., there is an important movement of persons over the border, the measurement and qualification of these flows in terms of tourism activity might present theoretical and practical difficulties.

From a conceptual perspective, it is recommended that the concept of usual environment be used and applied in a coordinated way with the country sharing the border. From a practical perspective, difficulties might derive from the fact that the population living on the border is often exempted from filing entry/departure cards or they pass through border crossings without interacting with customs officials or immigration authorities. As a consequence, the follow-up of these movements is often poor and might lead to

misclassifications. If relevant, a subset of such travellers could be shown separately as a memorandum item for analytical purposes.

In addition to these subsets of travellers, some other categories may require more information than the declaration of the main purpose of the trip in order to be able to identify the visitors among them. This is the case for those declaring to be travelling for “education and training”, “health and medical care” or “business and professional” purposes.

Students: Those taking short-term courses (less than one year) are visitors, whereas those taking long-term courses (one year or more) should be considered within their usual environment in their place of study and be excluded from visitors although, in both cases, they are considered as non-residents.

Patients: The same type of issues arises with long-term patients. In the balance of payments and national accounts, these travellers are considered as residents of their country of origin irrespective of their length of stay in the place where they are receiving their medical treatment. In tourism statistics, those staying one year or more should be considered as within their usual environment. Those staying for less than one year on the other hand should be treated as visitors. The identification of such cases should be developed with the help of immigration authorities.

Business and professional visitors: Identifying business and professional visitors separately from other travellers coming for work purposes, who are to be considered as non-visitors, usually requires the collection of more information than can be obtained through entry/departure cards. Border workers need first to be identified on the basis of the frequency of their border crossing. Other short-term workers who are not visitors are characterized by the existence of either an explicit or an implicit employer-employee relationship with a resident employer. An explicit relationship will usually be coupled with the requirement of a specific visa, whereas an implicit relationship might be more difficult to identify.

1.1.5. Types of Tourists

As mentioned earlier, tourist behaviour is useful to describe tourist types in terms of motivation, expectation, preference, and other behaviours. Gray¹¹ defined two types of tourists as being either wonderlust or sunlust. Gray defined wonderlust tourists as motivated by certain needs for personal experiences in a series of specific and culturally significant sight/ objects/ events which can be encountered in specific places. Wonderlusts want to see, to feel and to learn what is unique. They prefer to think in a cultural way rather than in a recreational way. It can be said that this tourism type may focus more on adult to retired tourists rather than on young tourists.

Sunlust tourists are defined according to their needs for recreation and rest, for entertainment and relaxation. Sunlusts pay less attention to where they go as long as their destination suits their recreation needs and comprises other necessary features such as accommodation and adequate security.

According to Cohen's¹² theory, the different types of tourists can be classified in two main categories:

- Institutionalized tourism: this kind of tourism relies on tour operators, travel agents, hoteliers, and transport operators. It comprises two types of tourists: the first ones fall into the category of organized mass tourism. They choose pre-arranged package tours at popular destinations, prefer hotels, and have little contact with the locals. The second ones are individual mass tourists; they arrange their holiday through an operator. Therefore, they can exercise a certain degree of personal choice.
- Non-institutionalized tourism requires little contact with tourist establishments. The explorers and drifters fall into this type of tourism. The explorers try to avoid tourist trails and try to associate themselves with local people. Backpackers staying in small hotels are a good example. Drifters look for new and exotic environments and attempt to merge with local communities by living and working with locals.

¹¹GRAY, H. P., 1970. *International tourism-international trade*, In: N. LEIPER. *Tourism management*, RMIT Press: Melbourne, Australia, p40-41.

¹²COHEN (E)., *Rethinking the sociology of tourism, annals of tourism research* 6, 1979. p18-35.

Sea sand sun (3S) tourism clearly fits under the category of nature-based tourism. The 3S tourists activities relate to marine and water sport activities such as scuba driving, skin-diving, snorkelling, and scooter¹³.

In addition, Jafari's springboard model refers to the core sense of tourist behaviour and tourist activities¹⁴. Jafari devised a framework that serves as a general model for understanding what processes and states of mind tourists go through when they go on a trip.

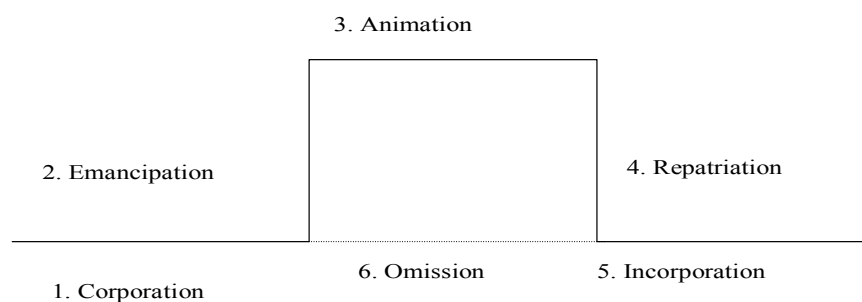


Figure 4: Jafari's Springboard Model

According to the model above, we can see where a tourist starts his everyday normal routine (corporation process). This is where the needs and motivations for setting out on a trip are formed. The second stage in the process is called emancipation. This is the moment when a tourist actually takes away from his home or residence. The third stage is animation, the temporary life as a tourist. Then comes the stage of repatriation which corresponds to the return to the ordinary place or home. The fifth stage is incorporation, the process of readjusting to a routine environment. The last stage is called omission and refers to the moment when everything has gone back to normal life.

From a technological point of view, "Jafari's Springboard Model" helps us to understand that innovation and technological advancements have improved the processes of determination and of search for an interesting destination, that they reduced the time it takes to modify a plane ticket or a holiday plan, and made it easier to find more comfortable customers services, along with many other improvements.

¹³WEAVER, (D). *Ecotourism*. Wiley: Australia, 2001.

¹⁴JAFARI, (J),. *Tourism model: the socio-cultural aspects, tourism management* 8, 1987, 151-9.

1.2 Technology Definition in Tourism

1.2.1 Identifying Innovation and Technology in tourism: What is the character of Innovation in Tourism?

Identifying the nature of innovation and technology in tourism implies looking for features that are either shared with or distinct from those of innovations in other service industries, but it also implies comparisons with the more general models found in manufacturing. In addition, issues arising in agriculture may shed some light as well.

Tourism products are “experience goods”. This feature seems consistent with the trend towards “service customisation”, “mass production of the made-to-measure”. In addition, tourism activity is deeply rooted spatially, the stage being set by the surrounding heritage, attractions and lodging facilities. Consumption also has a sequential dimension that affects the quality of the tourist’s overall experience. As a result, reference to the model for retailing can shed light on the manner in which tourism products are distributed and consumed. The tourism industry also involves activities that feature proximity to leisure industries: cultural, sporting and recreational pursuits. Since both are affected by industrialisation approaches, the development of short-term practices, the influence of innovations in urban tourism on the supply of leisure activities (casinos, museums, special events, etc.) accentuate the convergence to the point where it becomes difficult to establish a clear boundary between them.

- **Unique features of services** as compared to industrial models: marketing of services, the role of Research and Development (R&D), lack of patentability, attitude towards markets (tendency towards responsiveness), low degree of technology culture, etc. Services cannot be analysed exactly with the same analytical categories as are used to understand innovation in manufacturing industries. Taking an evolutionist approach, the taxonomy of Keith Pavitt (cited in Archibugi, 2001)¹⁵ classifies service firms, and especially those performing services for individuals, as “supplier-dominated”, being essentially users of technologies developed in the realm of manufacturing. The emphasis is on non-technological forms of innovation, such as professional know-how, brands and design, which then play a major role.

¹⁵ ARCHIBUGI (D)., "Pavitt's Taxonomy Sixteen Years on: A Review Article". *Econ. Innov. New Techn.* 2001, 10 (5): 415–425.

- **Non-unique features:** a boundary between industry and services: the industrialisation of tourist services and the shock of New Information and Communication Technology (NICT) are making tourism more innovative. Services are becoming more active in innovation by adopting NICT, as highlighted by the preponderance of tourism services in the development of electronic commerce.

1.2.2 Defining Innovation

Innovation can be defined in a multiplicity of ways. The leading theoretician of innovation, Joseph Schumpeter (1883-1950)¹⁶, already had a broad vision of the concept, encompassing new products, new production processes, new markets, new raw materials and new forms of organisation. For Schumpeter, the common thread between all these changes is that they involve “carrying out new combinations” which are qualitatively important and introduced by dynamic business leaders, or “entrepreneurs”. The definition generally accepted today does not necessarily entail a major change linked to a particular individual.

Today, it is necessary to take account of the uncertain (risky) nature of the process, and of the need for innovation to lead to the creation of value that in the final analysis is judged by consumers.

“A process of creating new value geared first towards customers, as the main arbiters of business competitiveness, but one that can also involve other stakeholders as major beneficiaries, such as the organisation itself (employees), shareholders (profitability), external partners, etc.”

Newness does not necessarily suggest creation

Innovation differs from creativity. Creativity refers to the production of new ideas, new approaches and inventions, whereas innovation corresponds to the application of new and creative ideas and the *implementation* of inventions. From this it follows that people and organisations may be creators without being innovators.

¹⁶SCHUMPETER (J) (1993), in CALLEJA (I), *Thèse : Contribution à une analyse du processus de transfert de technologie en petite entreprise*. UT1: Toulouse, 1997, p 17.

Innovation represents the sum total of a joint, social process (and not the result), at the culmination of which an invention is either used or not used. Inventions must be appropriated by user-adopters, which explain why the time lag is sometimes long between invention and innovation. It may involve only marginal changes. Should something be considered innovative if it is new at the level of a country, a market or even a firm? There would not seem to be a commonly accepted notion, and in particular not in the programme of the various European States: innovation is indeed a “chaotic concept”

Newness does necessarily suggest the idea of progress (technical, economic or social)

Innovation imposes discontinuity—Schumpeter’s “creative destruction” – which, while making users of the new product or process more satisfied and the firms using it more efficient, makes existing products or production methods obsolete. It therefore creates victims or, at the very least, readily appears as a threat to certain interests. The advent of superstores triggered the decline of small shops, and the development of new information and communication technologies is disrupting the world of tourism distribution. Apart from the impact on competitors, it is also necessary to factor in the spillovers for territories from innovation in tourism, and not everything new in this area necessarily advances the cause of sustainable tourism development.

Newness does necessarily suggest the idea of success

An innovator’s behaviour cannot be likened to that of a manager who, according to traditional economic theory, is supposed to optimise current operations. Risk is a central element for an innovator, and this risk increases with uncertainty and as innovation becomes more radical. Edifying examples of successful innovations must not be “the tree that hides the forest”. While the risk inherent in innovation inhibits innovation, the risk of *not* innovating (*i.e.* of falling technologically or sociologically behind, of losing ground to the most innovative competitors, of falling into inertia) often gives rise to excessively risky decisions that will end in failure.

In the light of this analysis, we can trace some similarity between the Tourism sector and new technologies. They share the same features in terms of “Product Life Cycle”: new tourism products involve an extension of the market with an increase in the number of firms, with eventually a reduction of the market and a large availability of the product.

Similarly, technology has a short life cycle and new technology is quickly developed and replaced by a newer one.

Indeed, “intangibility” should also be mentioned as a common characteristic shared by technology and tourism, even though tourism offers differentiated products. Compared to goods, services are intangible and are not delivered to customers but instead they deliver certain performances. Likewise, technology cannot be touched and its usefulness is difficult to predict precisely. When a customer purchases a technological item, it is impossible to know whether the product will be used in the right or expected manner.

CHAPTER 2: CHANNELS OF KNOWLEDGE IN TOURISM INDUSTRY

Inter-organisational systems (IOS) represent one use of IT and allow the transfer of information across organization boundaries. In the past electronic data interchange and electronic funds transfer have been the technologies to enter into IOS. The standards required for EDI and the high set up costs have tended to act as a barrier for Small and Medium Enterprises (SMEs) to enter into IOS. Tourism is dominated by the need to provide fast and accurate information to the consumer.

The first step to achieve this goal of a one-stop service is via global distribution systems (GDS), a form of IOS. GDS evolved from computer reservation systems (CRS) and enable the aggregation of information from airlines which enables travel agents (as information brokers) and tourists to 'make reservations and order Galileo, Amadeus and Worldspan. There is increasing debate concerning the long term viability of the large GDSs (Squires 2005). The systems themselves are dated, based on 1960s architecture and code, never intended for use with the Internet and as proprietary legacy systems are difficult to interface with existing modern computer and network architectures (Dogac et al. 2004; Squires 2005)¹⁷.

Chains of hotels generally have in place integration of the Property Management System (PMS) with the corporate Central Reservation System (CRS) and GDS. CRS integration allows for individual properties to benefit from the extensive reach of the chains marketing network and to allow for cross selling amongst properties within the chain. GDS integration allows chain properties to extend their reach beyond that of their chain marketing network.

This interoperability of systems is an example of collaboration around IT (known as collaborative commerce), especially the CRS which has been the most commonly used Wide Area Network (WAN) application in hotels (Brooks, 1999)¹⁸. This extends insofar as some independent hotels link to a GDS such as Sabre. Interoperable systems already exist

¹⁷DOGAC (A), et al , '*Semantically enriched web services for the travel industry*', *SIGMOD Rec.*,2004, vol. 33, no. 3, pp. 21-7.

¹⁸BROOKS (R. M)., *From the Hotel Property's Perspective*. The Network Computing Alternative: Hotel Online, 1999

in chains, but do not exist amongst independent hotels. Independents appear to resort to subscription to affiliate reservation networks that allow non-chain properties to participate as overflow facilities (Kasavana & Brooks 2001) rather than network amongst themselves.

In this way, “independents are to maintain their individuality and distinctive methodology, while still benefiting from the economies of scale that an affiliation with a larger group of likeminded properties can offer” (Travel Impact Newswire, 2004) ¹⁹.

2.1. Intermediary Channels

Collaboration around the Internet is a way for tourist operators, such as hotels, to deal with excess capacity and increase occupancy rates quickly. This already occurs within many chains and is evident in the participation in intermediaries or distressed websites such as needitnow.com, Travelocity.com; whatif.com and others. Three reasons have been identified for this change in the distribution of hotel rooms:

- A lack of understanding of hoteliers of how the Internet and online distribution works;
- Hospitality lags other tourism sectors in adopting the Internet as a distribution medium. Hotels were unprepared to deal with boom in online bargain hunting and bookings;
- Exploitation by intermediaries of the situation following 9/11 as hoteliers looking to increase revenues via increased occupancy relied on intermediaries to promote their product.

Starkov (2002) ²⁰ stated that the active role of these intermediaries may be viewed as a positive development for the industry. Online bookings are more cost effective, tend to attract more affluent customers and reduce reliance on more expensive distribution channels. Room occupancy rises as vacancies are effectively ‘sold’ online at short notice. However a closer analysis of the impact of this reveals a loss of control by tourist

¹⁹Travel Impact Newswire, edition 81, 1 December, 2004.

²⁰STARKOV (M)., The internet: Hotelier’s best ally or worst enemy? What went wrong with direct web distribution in hospitality? URL <http://www.hotelonline.com/> 2002.

operators and a trade-off between occupancy rates at the expense of yield and the associated Rev PAR²¹.

Yield represents the return to the business resulting from its operations. The aim of a hotelier is to maximise yield and Rev PAR. It is clear that selling rooms via distressed websites at a cheaper rate increases occupancy but has a negative impact on the other indices. The long term impact is brand erosion in terms of quality following downward pressure on room rates. It suggested that by 2005 around 54% of hotel online bookings will be direct sales reflecting a greater role of online intermediaries in the reservation process. Hoteliers, 'have difficulty maintaining market share and finding the right formula to deal with online discounters and intermediaries', demonstrating a lack of internet strategy and ineffective e-Distribution approaches. Hotels need to transfer their direct sales expertise to the web environment.

Realisation of the need to develop a direct web distribution strategy is critical as hoteliers seek to deal successfully with online intermediaries. Distressed web sites have a role to play in distribution, however should not be the only web distribution channel. If a hotel has not developed a direct web distribution plan it will only appear on the internet via distressed web sites which as discussed erodes its quality. A total online distribution strategy therefore is needed with a direct-to-consumer distribution model at the centre of the strategy, such as adopted by the airline industry. "The question isn't whether you should use the Internet or traditional methods to compete; it's how you could use *both* to your greatest strategic advantage."²²

2.2. The Internet Channels

Because of the difficulties encountered by tourism companies in order to obtain intellectual protection for their innovation efforts, and because of a virtual absence of any formal R&D, innovation in the tourism sector is not passed on via the same channels used by the manufacturing industry (trade, collaboration in fundamental research, and laboratories). In this respect, the roles of trade and of the institutional framework are vital

²¹REV PAR : the revenue achieved per available room

²²PORTER (M.E.), *Strategy and the Internet*, Harvard Business School Publishing Corp, Mass, USA, 2001.

Apart from a tourism firm's capacity to produce new knowledge derived from its activity, as in learning by doing, it is important to consider its capacity to:

- Acquire and absorb existing innovations, to “internalise” knowledge that is codified and convert it into tacit know-how – into routines. This partly explains the pertinence of Solow's paradox with regard to the tourism industry.
- Broadcast and circulate its innovations, *i.e.* externalise them in the form of codified knowledge capable of being circulated much more easily.

This capacity depends on structural factors: the size of the firm, the type of organisation and whether or not it belongs to a group. On this point, it seems clear that hotels which are part of an integrated or voluntary chain have a much stronger propensity to innovate, with the central management playing a vital role. However, it is the cognitive factors that would appear to be crucial: the proactive or reactive nature of routines, managerial skills (knowledge management), wage skills (qualifications, interaction, etc.).

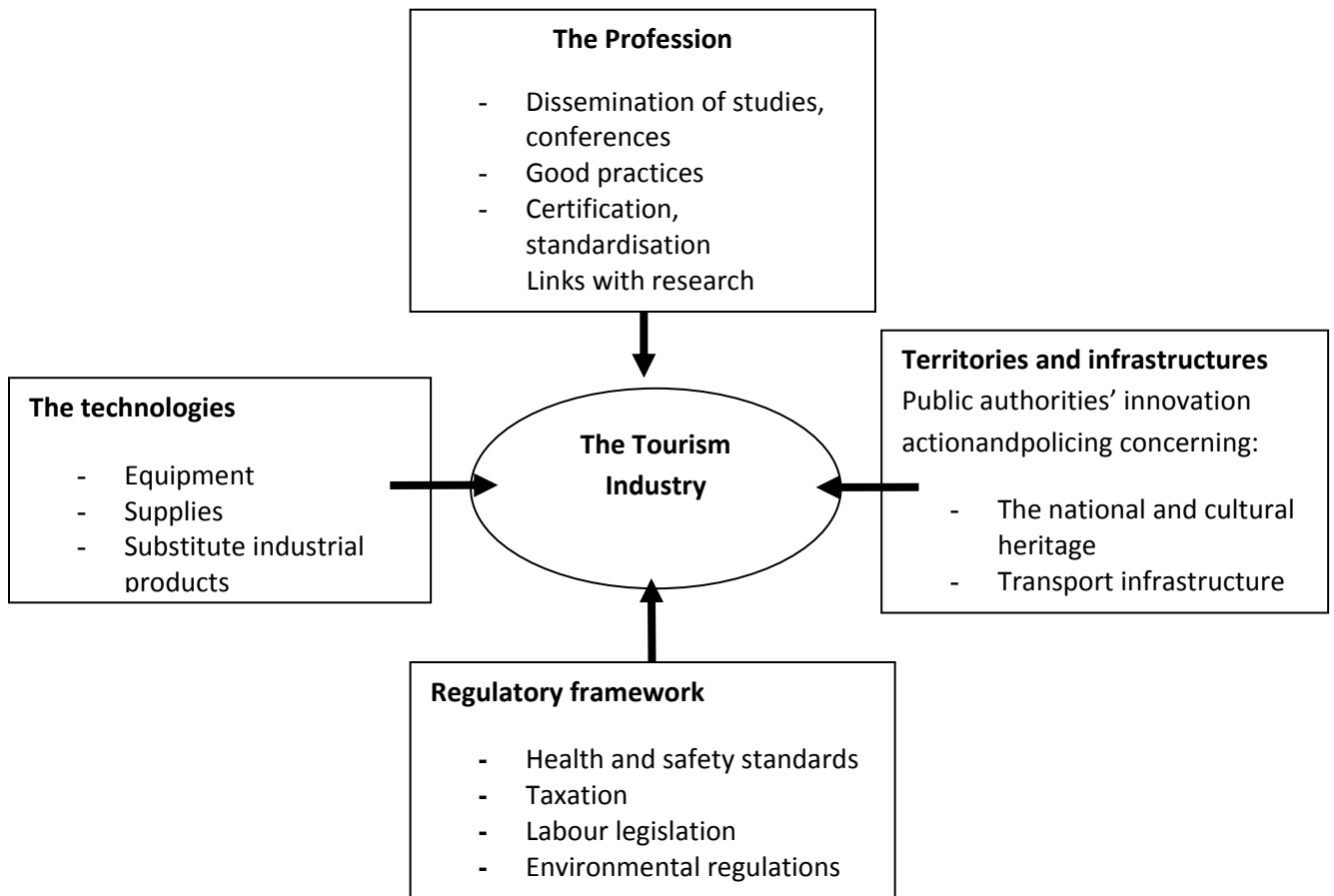


Figure 5: The channels via which knowledge is transmitted to the tourism industry Source: A-M Hjalager (1997)

The role of the national system of tourism innovation is also essential in at least four ways;

- Development of research, quality of the training provision.
- Tourism policy and action of institutional bodies [role of AFIT [Agence française de l'ingénierie touristique) and of the CDT (Comité départemental du tourisme) and CRT (Comité régional du tourisme)].
- Direct production of innovations by public operators (carriers, territorial authorities) with the benefit of government funds and substantial human capital.
- Indirect dissemination (percolation) by means of incentives (tax exemption) and assistance (subsidies).

2.2.1 The Internet and tourism

The Internet is an especially relevant tool in the tourism sector since it enables companies to collect information on their costumers, and costumers to collect information on the company or destination they choose. This gives 'rise both to global visibility of destinations and a global merging of market segments' (Werthner& Klein, 1999, p. 258)²³. The use of web-based tourist information systems has grown significantly. In 1996, 3.1 million consumers used these systems and this jumped to 33.8 million consumers in 1998. It was predicted that by 2008, 30% of the whole tourism business will be Internet based²⁴. Travel revenues on the Internet have consistently ranked highly in comparison with other goods and services²⁵.

The reasons cited for this prominence relate to the richness and currency of information provided online and the breadth of the audience as well as the intensity of competition and the emergence of new players with countless web sites supported by efficient transaction support. Online technologies within the tourism industry have significantly impacted on communications, transactions and relationships between the various industry operators and with the customer, as well as between regulators and operators.

WTO (1999), Clayton and Criscuolo (2002)²⁶ argue that technology behind the modern information society, particularly by way of the Internet, has brought about four key changes for the way in which business is conducted. These changes, which apply equally to the tourism sector, are:

1. The ability to turn ideas into marketable innovation for a wide range of customers, with reduced buyer search costs and costs of access to markets
2. Increased speed to market and access to new product offerings via the Internet

²³ WERTHNER (H)& KLIEN (S)., , *Information, technology and tourism: A challenging relationship*. Springer Computer Science, Springer:Vienna, Austria, 1999a. cited in PEASE (W)& ROWE (M)., *An overview of information technology in the tourism industry*.

²⁴ GARZOTTO (F)., et al.., 'Ubiquitous access to cultural tourism portals', paper presented to Database and Expert Systems Applications, 15th International Workshop on (DEXA'04), Zaragoza, Spain, August 30 - September 03, 2004.

²⁵ KADISON (H), *On-line Retail Strategies*, Forrester Report 1/1, <http://www.forester.com>, April, 1998.

²⁶ WTO, *Marketing tourism destinations online: Strategies for the information age*, Madrid, 1999.

CLAYTON (T)& CRISCUOLO (C), 2002. *Electronic commerce and business change*, National Statistics, viewed 16 April 2005,

3. Changed processes and the sharing of information within and between organisations
4. A shift in the balance of power between suppliers and customers due to the increased availability of information.

The issues raised above point to the benefits emanating from IT, especially the Internet. The first two factors have been discussed elsewhere. It is the third and fourth that will be considered here. The third point outlined above essentially makes ‘vertical disintegration’ of the value chain easier as the integration of electronic processes within and between firms is easier to achieve. This integration can take many forms, to its full extent collaborative commerce (c-commerce), and mean that ‘it may no longer be necessary for a firm to own a process in order to control it’.

This control may rather be achieved via the establishment of relationships between organisations. This is associated with various forms of collaboration or business networks that may emerge. The fourth point demonstrates the extra choice available to the buyer – therefore shifting the ‘balance of power’ to them since they can research their purchase and compare the offerings of competitors.

According to Internet World Stats (WTTC, 2011)²⁷, internet penetration has grown from 0.4% of the global population (16 million users) in 1995 to 30% (2 billion) in 2011. And the many different sources of online travel data all substantiate the growth trend. Use of the internet for booking tends to be higher in countries that have high internet penetration levels and usage of credit cards, eg the USA and UK. But the highest levels, interestingly, can be found in some smaller Travel & Tourism markets such as Scandinavia (65% and higher) and Australia. Globally, different estimates suggest that more than 50% of leisure trips and 40% of business trips are booked online (see figure 6 below).

²⁷WTTC TRAVEL & TOURISM 2011, p 22.

Online travel facts and figures, 2010

Country	(%) of population online	Mobile penetration (%)	(%) of travel booked online	Value of online travel market (US\$ bn)
China	32	58	18	11
India	4	36	25	4
Brazil	38	92	20	4
USA	74	91	40	93
UK	74	129	47	26

Source: PhoCusWright, 2010

Table 1: Online Travel Facts and Figures, 2010

Source: WTTC Travel & Tourism, 2011

The tourist has more choice when buying travel products also because of the options provided by on-line travel agents and direct marketing by airlines. Increasingly, tourists are becoming more computer savy and are expecting to be able to experience the destination ‘virtually’. The advent of intermediaries such as distressed web sites online means that tourists are willing to delay making their reservations online and are more price conscious.

Other changes in the way consumers behave – preferring to take shorter holidays with decisions made more spontaneously – have the effect of placing more pressure

on tourist operators who need to be more flexible in their offerings and in the way they relate to the market.

2.2.2 Benefits of the Internet

The tourism sector draws substantial benefits from IT, and especially from the Internet. These benefits are no longer dependent on proprietary information systems as has been the past experience, since the Internet is a commonly available technology. Dogac, *et al*, (2004) considers the Internet provides many advantages to players in the tourism industry. Some of these benefits are:

- Enhanced level of collaboration between tourism operators, for example, between travel agencies and service providers;
- Pre-arrangements with respective suppliers no longer necessary;
- Web service discovery will identify alternatives, enabling holiday packages to be constructed;
- Greater negotiation of service to be purchased and customization of services/activities; and
- Generally greater levels of interoperability with internal and external applications.

Whether these benefits have come to pass remains to be seen. Their realisation requires a new approach to be adopted by operators in the industry, particularly for SMTEs. The question is whether they recognise these potential spin-offs and are able to take advantage of them. They all point to the need for greater levels of IT adoption to be more flexible and responsive to the market, or collaboration with other players to achieve a ‘one-stop’ planning and booking experience desired by the tourist.

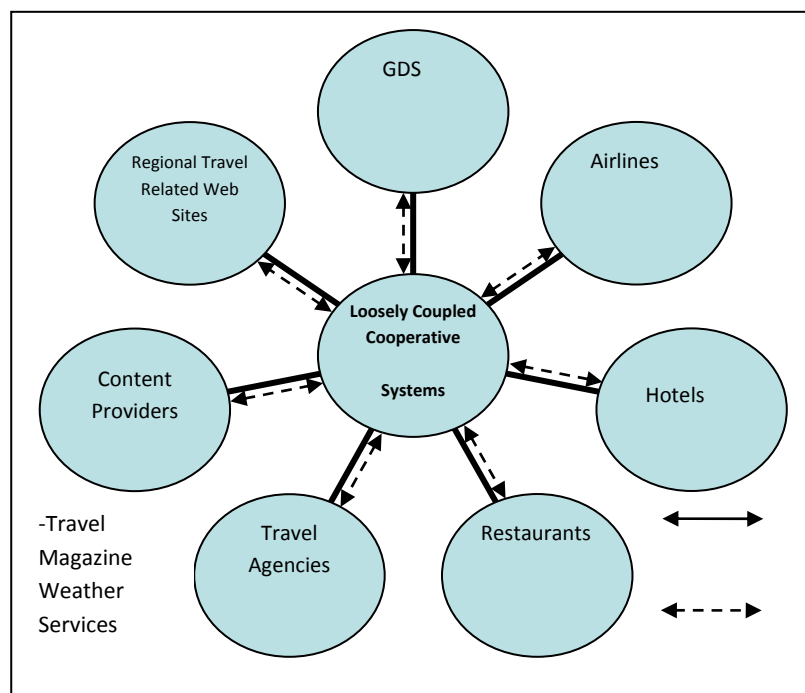


Figure 6: Framework depicting tourist operators and potential interplay of IT between operators (Joo, 2002, p. 61)²⁸

²⁸ JOO (J.), 'A business model and its development strategies for electronic tourism markets', Information Systems Management, 2002, vol. 19, no. 3, pp. 58-69.

As the above diagram indicates (Figure 7), many businesses or tourism operators are loosely connected over the internet so as to attempt to serve the tourist's needs, providing the seamless integration of information necessary to plan and book a travel experience. Potentially the Internet overcomes the barriers SMTEs especially have experienced re-accessing GDS and CRM, yet it is considered more progress is needed in this regard. This is because it enables individual tourist operators to link their websites and present a complete 'virtual tourism experience'. Gonzalez et al., (2004)²⁹ suggests a coming together of or cooperation amongst small players is required to generate 'coherent heterogeneity' – differentiation amongst the players in the midst of providing an integrated tourist offering.

2.2.3 Issues raised by the Internet

The internet has resulted in a proliferation of many ineffective html document based web sites³⁰ with small and medium tourist enterprises(SMTEs) possessing inadequate skills and insufficient resources to conduct a web site effectively. A Yahoo search reveals in excess of 250,000 tourist oriented websites. This exponential growth in the number of tourist related web sites means a 'lack of notoriety in a saturated market'.

The internet reduces distribution costs as intermediaries commissions are eliminated, however this is frustrated by the emergence of intermediaries, the squeeze on price, yield and revenue and the homogeneity of web sites. It is not clear that individual SMTEs are able to use this business intelligence, or recognise its value. If so, information may be lost and not acted upon. A sharing of information, either in a centralised or in a more collaborative manner would assist in the use this 'asset' of information and knowledge. The internet is a commonly available technology, however awareness of its functionality and resources and expertise to take advantage of this functionality is required.

It is observed that many SMTEs either are not aware of this or do not possess or have ready access to resources needed to make the most of the opportunities potentially

²⁹GONZALEZ (M.V) et al., *'Application of information technologies in the commercialization and management of tourist products and destinations, in intermediate regions: Reticular integrated strategies'*,

³⁰PALMER (A)& MCCOLE (P) 2000, *'The role of electronic commerce in creating virtual tourism destination marketing organisations'*, International Journal of Contemporary Hospitality Management, vol. 12, no. 3, pp. 198-204. paper presented to WISICT '04: Proceedings of the winter international symposium on Information and communication technologies, Cancun, Mexico, 2004.

available. For these benefits and others to be achieved however, and so full exploitation of web services, 'it is necessary to introduce semantics to web services'³¹. The semantic web which is an extension of the World Wide Web, is designed to bring structure and meaning to the vast array of information available on the World Wide Web. In bringing this structure, the web creates knowledge which is readily accessible by both humans and machines (software agents, artificial intelligence, for example). The structure imposed by semantic webs is achieved through the imposition of ontology to give meaning to information.

2.3 New Information and Communication Technology (NICT) Channels by Tourism Distribution

The availability of new technologies led to the development of new skills, new materials, new services, and new forms of organisation. This is especially true for the last two decades where the role of technological innovation was crucial³². In tourism, technology created a new form of business called e-tourism, which today is the biggest force in e-commerce. This development and new skills in tourism management (e-marketing) were necessary, as for example for a variety of coaching and interactive skills in the fields of wellness or adventure tourism. New information services for guests emerged as databases eased processing customer profiles and customer behaviour. Moreover, new forms of network organisation emerged particularly in the field of co-operative tourism marketing. They have also been enabled by using new technologies.

The contribution of technology's applications in tourism has been widely recognised, while the consequent alterations in the structure of tourism sector are still being examined. The travel and tourism industry has benefited tremendously from the implementation of Information and Communications Technology (ICT). The growth of the Internet and new technologies in general, has influenced the overall sector and more specifically destinations, in terms of promoting themselves and approaching potential customers (visitors) who seek information and fulfil their purchase through the Web. Looking at the

³¹DOGAC (A), et al , '*Semantically enriched web services for the travel industry*', *SIGMOD Rec.*,2004, vol. 33, no. 3, pp. 21-7.

³²WEIERMAIR (K)., *Product improvement or innovation: What is the key to success in tourism?*, OECD Journal: France, 2004, p 4.

supply-side of travel and tourism, we can see ten good reasons, according to Pollock and Benjamin (2007)³³ as to why Travel and Tourism provides such fertile ground for the application of distributed, peer-to-peer, web services-based solutions:

1. The dominant feature of travel and tourism is supply-side fragmentation. Literally hundreds of thousands of enterprises are involved in providing the various elements associated with overnight travel. Travel/tourism providers are so geographically scattered and so numerous that no one technology vendor or distribution channel can dominate.
2. These providers are also characterized by extreme heterogeneity and diversity in terms of focus, size and sophistication.
3. The vast majority of providers are classed as small, medium or micro-sized (SME's or SMB's). In Europe, about 99% of enterprises employ less than 10 persons. As the vast majority of them do not provide services that can be purchased online, they are still in a digital sense "invisible" and excluded from e-commerce.
4. Within each sub sector and destination, providers actively compete with one another. Cooperation and collaboration only occurs when attempting to reach distant markets and build business volumes to a destination. Autonomy, self-sufficiency and choice are the values and qualities prized by providers.
5. Providers are dependent on a multiplicity of intermediaries and the distribution chain is long and expensive. They are required to distribute their perishable, time-specific inventory via multiple channels and "brands", managed by intermediaries using a variety of technologies and platforms, each requiring separate interfaces.
6. Take-up of sophisticated electronic systems is slow. Most providers will only have dial-up connections. They will not want to join exchanges that rely on private networks nor have their data exposed to potential competitors.
7. Providers have neither the financial resources nor the time to manage multiple systems. Extremely independent, competitive entrepreneurs, they want control over their own inventory management, sales and content.

³³POLLOCK (A) & BENJAMIN (A). *The Impact of Information Technologies in Destination Marketing*. EIU Travel & Tourism Analyst, 2007.

8. As a result of the volume and fragmentation of both the providers and intermediaries, the industry is awash with thousands of legacy applications that would be costly, if not possible to dismantle and replace.
9. The sector is particularly vulnerable to the ravages of commoditisation and operates on paper-thin margins. Reducing distribution costs, which can exceed 25% of turnover, provides the best opportunity to improve the bottom line and highlights the importance and advantage of selling directly to the end user.
10. Each provider is embedded in a larger network of suppliers from which it procures the goods and services necessary for operations and a community network of hosts (public and private agencies responsible for helping and benefiting from the economic activity of tourism at the destination).

The impact of new technologies on services is the main focus Richard Barras's³⁴ reverse cycle model. The adoption of NICTS by service activities can be understood as being firstly an incremental process of innovation intended to enhance the efficiency of a service by substituting capital for labour (for example, automation of tourist operators back offices).

Secondly, the accumulation of knowledge and IT progresses enables radical process innovations thus improving the quality of service (this includes front office operations such as changes in reservations). The third phase of the cycle which is characterised by product innovation and which has become the main goal of the tourism industry nowadays, is implemented through the use of network technologies and through the constant need for renewed product differentiation strategies.

³⁴BARRAS (R)., *Toward a theory of innovation in services*, in Research Policy no. 19: Paris,1986.

Period	Nature of Innovation	Objective	Means	Example
1	incremental process innovation	Productive gains	Substitution of capital for labour Agencies acquire IT equipment	Back office automation
2	Radical process innovations	Improve service quality	Accumulation of competencies (IT	Front office operations; reservation
3	product innovation	Product differentiation	Network technologies	New online products; auctions "last minute"

Table 2: Adoption of NICTs by Tourism distribution

An interesting study about Internet and the Hotel sector has been recently implemented (Eurobank 2008) ³⁵. Generally speaking, the results of investigation (Figure 9) show that the probability for someone to select incidentally for e.g. Greece as tourist destination between competing countries in the Mediterranean region is 5,1%, behind Italy (12,7%), Spain 10,5%, Turkey 6,4% and Portugal 5,3%. Similarly, Bulgaria has a chance of 4.6% while Romania's chances are 4.5%.

Further comments can be made regarding the huge number of web pages referring to Italy (767,000 that is to say more than 3 times more than Spain) putting Italy on top of the list among European countries but also worldwide, along with France. It also appears that Greece displays more web pages that promote hotels and lodging services than Portugal, and yet Greece lies behind Portugal in the world list of tourist countries.

³⁵Euro bank. *The Internet and the Hotel sector in Greece (in greek)*, Vol. III, <http://www.eurobak.gr/research>, 2008.

Country	Holidays	Pages/ inhabitant	Probability	Book online	Last minute	Search travel	Probability
Web pages				Web pages	Web pages	Web pages	
Italy	5,190,000	89	12.70%	1,190,000	140,000	1.423	11.30%
Spain	4,280,000	106	10.50%	1,080,000	15,000	1.287	10.20%
Turkey	2,630,000	37	6.40%	568,000	85,900	831	6.60%
Portugal	2,170,000	204	5.30%	716,000	44,500	845	6.70%
Greece	2,080,000	194	5.10%	646,000	82,200	921	7.30%
Israel	2,020,000	314	4.90%	462,000	51,000	645	5.10%
Cyprus	1,930,000	2478	4.70%	494,000	78,100	636	5.00%
Bulgaria	1,900,000	259	4.60%	340,000	29,400	629	5.00%
Egypt	1,890,000	26	4.60%	460,000	67,600	798	6.30%
Croatia	1,850,000	412	4.50%	373,000	23,000	616	4.90%
Malta	1,850,000	4568	4.50%	373,000	37,900	580	4.60%
Romania	1,840,000	83	4.50%	292,000	14,100	494	3.90%

*Table 3: Web pages and shares for different countries
Source: Euro bank, 2008*

ICT technologies and use of the Internet has been changing the way tourism businesses operate. Electronic intermediaries are emerging dynamically and challenge traditional distributors, for example, Expedia and Lastminute.com. Similarly, auction sites such as eBay.com, price comparison sites such as Kelkoo and Kayak.com; price reversing sites such as Priceline.com and price prediction sites such as farecast.com also provide a great challenge for pricing of both suppliers and intermediaries. Tripadvisor.com, IGOUGO.com and Wayn.com have become very popular among customers because they enable consumers to interact and to offer advice (ibid). All the actors in the tourism sector are therefore forced to rethink their business models. For example, many tourism organisations aim to bypass all intermediaries that add cost to their production and distribution.

The importance of innovation was long underestimated in the service sector (Decelle, 2003)³⁶. In contrast to the radical innovations vital to growth in manufacturing sectors, innovation in tourism was secondary and capital scarce and for this reason was excluded from the scope of government interest and actions. It is important to note that the discourse changed with the emergence of new information and communication technologies (NICT), which have been influential in the realm of tourism.

2.4 Technology Channels by tourism activities

The rate of high quality patenting (triadic patent families) is rapidly increasing in non-OECD economies. On average over 40% of OECD inventions are also protected in China (see also figure 7: *Triadic Patent Families by Blocs: 1999 and 2009, in appendices*). These technology flows mirror the strategic behaviour of firms, the location of both subsidiaries and competitors, and the attractiveness of emerging markets. Indeed, the map above shows the main channels of Technology Transfer through the procedure of patent sharing flowing from the country of origin of the inventors to the destination countries. We can observe that these transfers in a great majority originate from Europe and North America.³⁷

³⁶DECELLE (2003) cited in TOUREG, *Global SWOT Analysis*. Department of Tourism Management of the Alexander Technological Educational Institute of Thessaloniki, Greece and the Technical University of Crete, Greece. October 2009, pp 46

³⁷OECD, *calculations based on the World Wide Patent Statistical Database*, EPO, April 2011; Map source: ARCTICQUE. Cited in OECD Science Technology and Industry Scoreboard, 2011, pp 51.



Figure 8: Technology Transfer to Selected BRIICS, 2005-2007 : Share of patent by Origin of Inventor and patent office of Destination
 Source: OECD, calculations based on the World Wide Patent Statistical Database, EPO, April 2011; Map source: ARCTICQUE

According to VELLAS (2007)³⁸, technology transfer can help the tourism sector, and in particular the local population and TPEs (very small businesses) via differential tools, such as for example: marketing, management, design, production, dissemination, quality range. However, technology transfer is not only an abstract training method, it is also a practical way to permanently solve actual problems inherent to the tourism sector.

Moreover, international tourism is an activity involving advanced technology which represents a challenge for developing countries as to how they can adapt to market evolutions and to the rising importance of new technologies. For example, in order for those countries to let their recently built hotels benefit from the effects of essential economic channels, they settle franchise agreements with international hotel chains which in return provide their brands, their technology and their marketing networks. In terms of management, these contracts provide an international experience to the newly founded hotel complexes, but they also represent a risk for developing countries in the sense that it puts a certain pressure on their occupancy rates.

³⁸VELLAS (F), *Role of I.T.C. in the implementation of effective tourism policies and strategies for developing countries: Best Practice, New Products, New Market, and Competitiveness*, (Meeting on the Trade and Development Implications of Tourism Services for Developing). UNCTAD: Geneva, 2007.

It is obvious that sustainable development should focus on the relationship between ethics and the principles of quality and durability. Quality means satisfying customers' expectations without impairing durability and yet maintaining a profitable economic activity by paying the actors of production in a fair manner. These two objectives are inconceivable without an ethical involvement of people (executives, shareholders, managers, personnel, benefiting community) engaged in the "tourism process." The development and implementation of sustainable tourism policies must be based on a number of principles and approaches that can be applied universally. Some of them are inherent to the principles of sustainable development, others have been identified in the course of time by those working in the sector.

2.4.1 Technology Issue and Hotel Revenue Management

Based on the results provided by Kimes' study (2008)³⁹ on hotel revenue management, it can be stated that the hotel industry has three ways to attract the right sort of people into revenue management. The first way consists in developing broader and more efficient internal training programs in order to help employees who are interested in working in RM. Secondly, revenue managers should be offered higher salaries. Lastly, career paths offered to revenue managers should be more structured.

Improved training (in terms of technology improvements as well) can help both existing and new employees by giving them the necessary skills, and educational institutions could focus courses on revenue management to prepare graduates to take on the challenge of a revenue management position. Along that line, higher salaries will attract more qualified applicants for revenue management positions. When solid remuneration is combined with improved training and a clear career path, the industry should see higher performing revenue managers and improved profitability. A more structured career path will not only help attract qualified applicants, but should also entice them to stay within the company.

³⁹KIMES (S.E)., *Hotel Revenue Management: Today and Tomorrow*. Cornell Hospitality Report: Cornell University, School of Hotel Administration, USA, Volume 8, no. 14, August 2008, pp 13

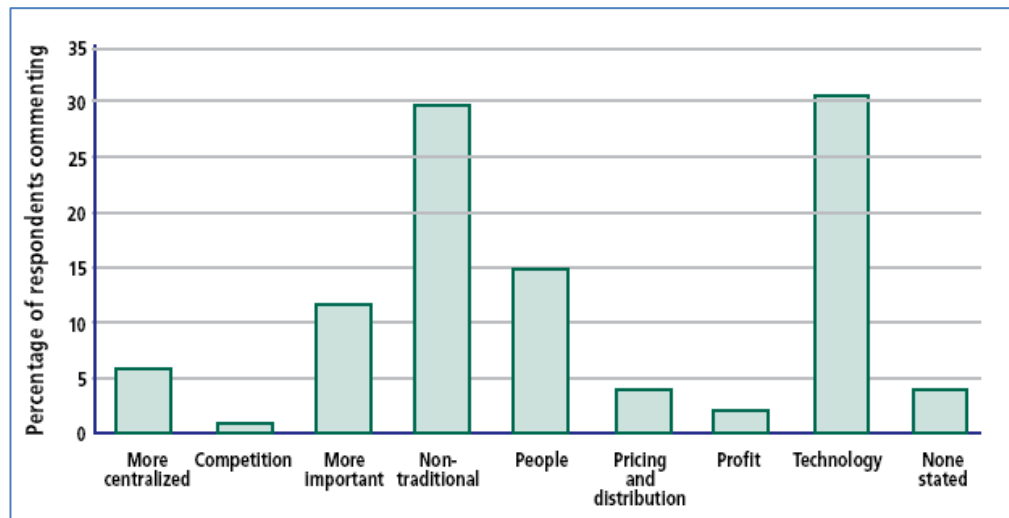


Figure 9: Future Revenue Management
 Source: KIMES (S.E),. *Hotel Revenue Management: Today and Tomorrow*, 2008.

Kimes’s study showed that the influence of technological applications became the most influential factor in hotel industry (about 31%) (see figure 10 above). The study also showed that even though technology will be advancing further in the future, the human element which has to interpret and intervene will remain unchanged. According to past and present experiences with automated systems including a major human influence, more organisations should be using a revenue management system in the future as it will become more affordable, and the same organisations will thus be practising more dynamic pricing.

However, complexing technology improvement and outsourcing may have to come into serious consideration as revenue management resources will become more scarce while more hotels will open. From this issue, inter-company transfers, best practices and tool consistency will have to be further improved and streamlined.

2.4.2 Technology Performances and Contribution to Tourism industry

Technology *production* in tourism/hotel sectors is implemented by using new materials/equipments and the benefits of productivity. “Innovation Hotel” shows the different design of new hotels or new tourism products which link to technology.

Indeed, ‘Innovation Hotel’ illustrates a concrete application of new technology transfer policies aimed at improving services as well as helping tourist activity to obtain greater competitiveness. *Design* is today one of the areas that is affected the most by technological

improvements: hotels improve their design in order to impress and attract more customers into their establishment. **Management** is also greatly affected through computerized equipments in hotels and restaurants, such as key cards to enter guest rooms, softwares such as MOS or POS (Management Operating System and Point-Of-Sale) used in travel agencies and by tour operators. **Distribution** is modernised through the process of technology transfer: tourism products are now delivered via new networks, such as Amadeus (reservation system). **Marketing** is transformed in its approach and in the way products are being sold. **Standard of Quality** represents a marketing strategy which aims at reaching more customers. **Environmental Management** is also a new approach to tourism with the implementation of labels such as the Green Hotel Label, or the CSR in the hotel sector (Corporate Social Responsibility). These examples of environmental management have been applied mainly in hotels situated in developing countries.

As far as environmental management and technology are concerned, economic literature⁴⁰ presents two levels at which the relation between international tourism trade and **environmental effects** can be examined. The first one is the macroeconomic or global level. And the second one is essentially the microeconomic level within bilateral trade models. Globalisation induces an increase in international trade exchanges and in interrelationships between countries, which therefore facilitates environmental interchanges and agreements. For example, environmental goods and technologies can be traded in order to reduce pollution in tourism and hotel organisations, and agreements can be reached in order to set standards on production methods and trading.

Secondly, bilateral model have been used in terms of bargaining between two countries by each to secure economic gain. For example, Chapman (1999), Hanley et al (2001), and Perman et al (2003)⁴¹ tend to follow similar lines by explaining the standard economic models of comparative advantage and gain from trade, then considering the effects of unilateral environment policy actions. This theoretical analysis is boarded to suggest the effects of policies at a global level before examining the empirical evidence of the effect of environmental policies.

⁴⁰STABLER (M.J) et al., *The economics of tourism (second edition)*. Routledge New York, USA, 2010

⁴¹PERMAN (R) et al., *Natural Resource and Environmental Economics.*, Harlow: Pearson, 2003, cited in STABLER (M.J) et al., *The economics of tourism (second edition)*. Routledge New York, USA, 2010 pp. 279.

²⁵ACTING FOR LIFE., *Handbook for technology transfer in the tourism sector in developing country and least developed countries (LDCs)*. Tourism Ethics and Development Program, Tourism Acting for Life, France, 2009 pp29

The research led by of Acting for Life (*Groupe Développement*)⁴² revealed that technology is an essential tool in the tourism sector as it provides an assistance program favouring tourism SMEs and micro-enterprises as well as acquisition modes based on technology transfers. These processes are relevant in many developing countries and LDCs and they take place in numerous establishments including small units.

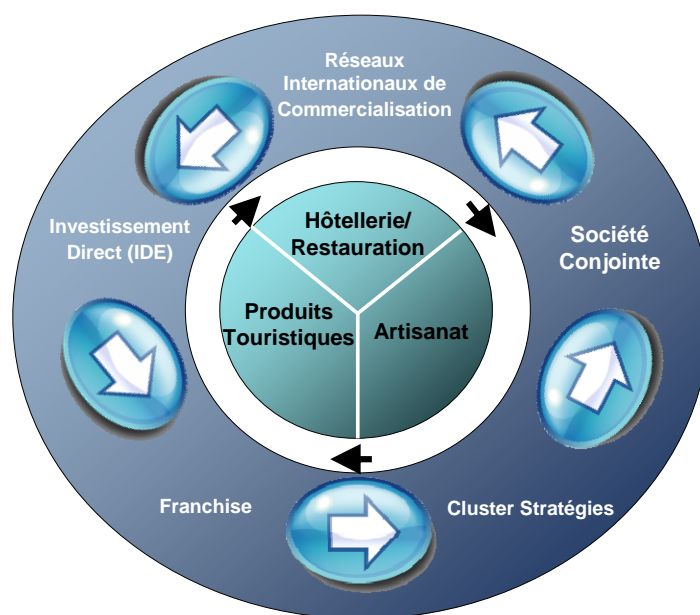


Figure 10: Technology Transfer Process in Tourism
Source: Acting for Life, 2009

Furthermore, four main channels are discussed in relation to the mode of acquisition of technology transfer. *Direct International Investment (DII)* comprises a theory of the best way to transfer technology in the tourism and hospitality sector. However, some remarks are made on the fact that in a number of developing countries and most Least Developed Countries (LDCs), DII is realised in an inadequate way as to ensure an effective technology transfer. Indeed, without taking into account the potential economic but also political risks, international investors require consistent returns on investments, which in general are incompatible with business plans. Secondly, *Hotel Franchise*, is evoked as a way to ensure the development of international hotel chains and of technological transfer towards developing countries and LDCs.

⁴²ACTING FOR LIFE., *Handbook for technology transfer in the tourism sector in developing country and least developed countries (LDCs)*. Tourism Ethics and Development Program, Tourism Acting for Life, France, 2009.

Hotel Franchise involves a *franchiser and a franchisee* (see further discussion on franchiser and franchisee in chapter 4). Hotel franchising is particularly important in order to make technology transfers possible in developing countries. However, in the case of LDCs, it is difficult to mobilise local operators likely to fulfil the financial, technical and human requirements of the franchisers. Joint ventures typically rely on the use of hotel franchising. Lastly, International marketing networks (usually via voluntary adhesion to chains) are often linked to local firms in order to ensure the marketing of tourism products. However, several problems appear for tourist products coming from LDCs, except for a few establishments that belong to large international hotel chains.

**PART II: THEORIES OF INTERNATIONAL TOURISM
SPECIALISATION AND TECHNOLOGICAL FACTORS
IN TOURISM**

PART II: THEORIES OF INTERNATIONAL TOURISM SPECIALISATION AND TECHNOLOGICAL FACTORS IN TOURISM

The traditional trade models attempt to explain why some countries export certain commodities, and others not. While trade has occurred since the dawn of civilisation, it is only more recently that economists have tried to identify why and what countries should trade, and with whom⁴³. Adam Smith's absolute advantage and David Ricardo's theory of comparative advantage paved the way, the Heckscher-Ohlin theory was posited to explain that countries will export goods produced with the abundant factor of production. New trade theories have some strong assumptions of Heckscher-Ohlin and incorporating increasing returns to scale and transport costs, paved the way for a more nuanced understanding of trade. While these theories helped to explain the rapid rise in global trade, the services sector has witnessed even greater growth performance. The improvements in communication technology, notably the development of the internet and cellular technology, have allowed for specialisation.

The theory of Vernon (1966) is based on the experience of the International Product lifecycle. Vernon himself observed and found that a large proportion of the world's new products came from the US for most of the 20th century. The US at the time was the initiator of the new technologically driven products of the time.

Tourism is an activity where capital, infrastructure, knowledge and access to global marketing and distribution chains are critical. FDI is often considered one of the most effective engines for harnessing these elements⁴⁴. Hence most developing countries place a high priority often the highest priority on attracting such investment, some by experimenting with a variety of policies.

⁴³TOIT., FOURIE (J), TREW (D) ., *The sources of comparative advantage in tourism*. Stellenbosch Economic Working Papers: 01/10. University of Stellenbosch: South Africa. pp 7.

⁴⁴UNITED NATION, CONFERENCE ON TRADE AND DEVELOPMENT. *FDI in Tourism : The Development Dimension*. United Nation: New York and Geneva, 2007. pp 6-7.

This part relates to the discussion of trade theories and technological factors in international tourism specialisation. The theory of comparative advantage through tourism, Heckcher-Ohlin theory and technological factors, as well as the theory of demand and application in tourism will be mentioned in chapter 3. The role of foreign direct investment (FDI), multinational firms (MNFs) and international tourism specialisation, the theory of Vernon international product life cycle (IPLC) and technology, lastly, the Butler's tourism life cycle will also be discussed in chapter 4.

CHAPTER 3: THEORIES ON TECHNOLOGICAL FACTORS AND INTERNATIONAL TOURISM SPECIALISATION

3.1 The Notion of Technology Paradigm

According to the authors, these concepts will take various appellations and are scanned at different levels of aggregation. The table below tracks the variants of the concept of paradigm as well as the specific features main models proposed by each author.

Autours	Definition
Nelson et Winter, 1982 ⁴⁵	Paradigm is a knowledge base that brings together a set of information, knowledge and abilities
Freeman et Perez, 1998 ⁴⁶	Technico-economic paradigm is a set of new industrial organization principles imposed on corporate enterprises
Dosi, 1988 ⁴⁷	Paradigm is a model of selected techno-economic problems. These are based on scientific principles and hardware technologies selected deriving from the natural sciences, specific rules associated to acquire new knowledge and to preserve it, when this is possible, a rapid dissemination to the competitors.

Table 4: the notion of technology paradigm

It appears through the contributions of different authors, a certain consensus on how technological change is considered as a whole. Change process would result in a change of paradigm that generalises the technological trajectories.

⁴⁵NELSON (R)& WINTER (S), *And Evolutionary Theory of Economics Change*. Belknap Press of Harvard University Press, Cambridge, 1982

⁴⁶FREEMAN (C) & PEREZ (C) cited in DOSI et al. *Structural crises of adjustment: Business cycles and investment behavior*. 1988, pp 38–66.

⁴⁷DOSI (G) et al, *Technical Change and Economic Theory*. Londres, Pinter. Nueva York, Columbia University Press, 1988.

3.1.1 The Theory of International Exchange

AUBIN and NOREL (international economics, 2000) stated that the concept of international trade started the process of specialisation of tasks. It is a way of delivering more cost or benefit. According to SMITH (1776), specialisation can also increase productivity. Production building can be accompanied by a decrease in unit costs. Moreover, international exchange also constitutes an advantage for the countries who exchange and share goods.⁴⁸

To benefit from the specialisation of the international division of labour, the theory of absolute advantage also provides an early response to the question of the meaning of trade. Each country thus exports the good for which it has an absolute advantage. To benefit from the specialisation of Exchanges, each country must develop a production for which it has the lowest cost. On specialisation and international exchange, Smith (1776)⁴⁹ stated that a relative advantage allows a greater productive efficiency.

3.1.2 Technology correlates with production system

Theories of contingency helped to open new perspectives in the analysis of organisations and industrial economics, bringing more than relativity in the understanding of complex phenomena. Their main contribution is to explain the organizational differences according to their ability to adapt to change and their ability to innovate. The work of WOODWARD (1965)⁵⁰ has shown that similar technical production systems were identical organisational structures.

In a similar manner, BURNS and STALKER (1961)⁵¹ highlighted the organisational characteristic types depending on the environmental situation (stability of the technology used, degree of stability of the market) that each firm undergoes. International economic relations consist in the trade of goods and services as well as in cultural, scientific and technological exchanges.

⁴⁸AUBIN (C) et NOREL (P). *Economie internationale*. Paris, Edition du seuil, 2000 pp. 371-388.

⁴⁹SMITH (A)., *The wealth of nations*, London, W.Strahan and T. Cadell, 1776.

⁵⁰WOODWARD (1965) et BURNS et STALKER (1963), in CALLEJA (I), *Thèse : Contribution à une analyse du processus de transfert de technologie en petite entreprise*. Toulouse, Université de Toulouse1, 1997, p 60.

⁵¹BURNS (T)., & STALKER (GM). *The management of innovation*. London: Tavistock, 1961.

3.1.3 Intellectual and Cultural Exchanges

In the future, the major phenomenon which will intensify the international circulation of ideas and culture consists in the constant progress in the sector of telecommunication. But trade can also be performed at a certain level in the field of education and training (e.g. study travels abroad, internships).

3.2 Characteristics of Technologies and Tourism Sectors

Because of the intangibility of tourism products, tourists may feel uncertain about the quality of these services. Despite or because of this intangibility, tourism products can be enhanced in value by adding sensations (design, fragrance, light, colour, emotional attachment). As a consequence of such product changes, the emotional value of the “tourism experience” will be enhanced⁵².

The work and capital-intensive tourism industry can bundle resources, acquire know-how and minimise risks by building up networks. As a result, new markets can be served, fewer resources must be invested and entrepreneurial options will be created. Similarly, IT based innovation in distribution and marketing as well as firm alliances or other forms of co-operative marketing will help to reduce cost, thereby increasing customer value, and market share and/or market extension.

The types of Technology concerned by the various transfers are mainly new technologies and advanced technologies. The characteristics of these types of technologies include ingenuity, complexity, innovativeness, non-standardization, etc (Sang-hyeok Seo, 2000)⁵³.

- Uncertainty: technology cannot be touched or grasped, and its usefulness is difficult to predict precisely. When a customer purchases a technological item, it is impossible to know whether the product will be used in the right or expected manner.

⁵²WEIERMAIR (K.), *Product improvement or innovation: What is the key to success in tourism?*, OECD Journal, 2004, p 4.

⁵³SANG-HYEOK. *A study on the actual situation & promotion plan for technology utilization by advanced venture enterprises*, Science & Technology Policy Institute, 2000

- Ingenuity: since scientific results are produced at a high pace, it is ingenious, complex and in cases still undergoing developments.
- Innovativeness: there are cases where technology or new products drive out existing technology or other products from the market. The appearance of new technology speeds up the decline of existing technology, and in the case where the scope is wide it can suddenly transform the condition of a particular industry.
- Reduced development period & short life cycle: the speeding up of development and the shortened life cycle of today's technology is the general trend. New technology is quickly developed and replaced.
- Complexity: in accordance with the fusion with other technologies and advancement, technology development has high complexity with diverse technological factors and technology solutions in relation to buyers.

In accordance with the characteristics of technology above, the marketing of technology also bears different characteristics to the general marketing sector.

High risk: a burden of high risk is felt by the decision makers in relation to the marketing of technology. Technology itself being intangible, the risk becomes greater the more complex and elaborate the technology is, and the shorter its life cycle is.

- Long transfer period & procedural complexity: technology transfer is more complex than the transfer procedure of general products and often takes a long period of time.
- Importance of time management: with the shortening of technology life cycles and the rapid increase in development speed, efficient time management is more important. This means that if there is hesitation as to the development of a technology, it can be soon weeded out from the market.
- Importance of opinion adjustments between transfer parties: technology buyers and sellers are all comprised of many sections, and there are many cases where their attitudes differ. Differences in opinion often occur between the research personnel and the marketing manager within the selling organisation, and between the high

level management and the technology director within the purchasing organisation.

This factor is an obstacle in the process of technology transfer and transactions.

Characteristics of technology and the marketing of technology have been explained above. *Since technology is an intangible asset, it is closer to a service than to a product, and its transfer type is closer to an industrial one rather than a consumable one. Thus, the application of a marketing strategy for services and industrial property would be the most favourable. On the other hand, there is a need to devise an advanced venture product marketing technique in accordance with the complex, high risk, innovative characteristics of the technology. Finally, technology can be directly transferred, or utilised through licensing, strategic alliances, venture enterprises etc.*

3.3 Comparative Advantage in Tourism and Service Sectors

3.3.1 The Concept of Comparative Advantage

The theory of comparative advantage (CA) is perhaps the most important concept in international trade theory. The first known statement of the principle of comparative advantage and trade appeared in an article by Robert Torrens (1815)⁵⁴, entitled "Essay on the external corn trade". Torrens begins his work by describing the basic idea of absolute advantage as described by Adam Smith. The early logic that free trade could be advantageous for countries was based on the concept of absolute advantages in production.

Adam Smith (1776) wrote in *The Wealth of Nations*, "If a foreign country can supply us with a commodity cheaper than we ourselves can make it, better buy it of them with some part of the produce of our own industry, employed in a way in which we have some advantage. " The idea here is simple and intuitive. If our country can produce some set of goods at a lower cost than a foreign country, and if the foreign country can produce some other set of goods at a lower cost than we can produce them, then clearly it would be best for us to trade our relatively cheaper goods for their relatively cheaper goods. In this way both countries may gain from trade.

⁵⁴TORRENS (R), *Essay on the external corn trade*, 1815.

The difference in opportunity costs offers the possibility for a mutual beneficial rearrangement of world production. Let the U.S. stop growing winter roses and devote the resources this frees up to producing computers; meanwhile, let South America grow those roses instead, shifting the necessary resources out of its computer industry. The changes in the results of world production can be seen in the table below.

Table	Hypothetical Changes in Production	
	Million Roses	Thousand Computers
United States	-10	+100
South America	+10	-30
Total	0	+70

Table 5: Hypothetical Changes in Production

The reason for which the product of international trade increases in the world is that specialisation allows each country to focus on the production of goods in which it has a comparative advantage. A country has a comparative advantage in producing a good if the opportunity cost of producing those goods in terms of other goods is lower in that country than it is in other countries.

In this example, South America has a comparative advantage in winter roses and the U.S. have a comparative advantage in computers. The standard of living can be increased in both places if South America produces roses for the U.S. market while the U.S. produces computers for the South American market. Therefore, it gives an essential insight about comparative advantage and international trade: *Trade between two countries can benefit both countries if each exports the goods in which it has a comparative advantage.*

3.3.2 The Theory of David Ricardo: a Numerical Example

Because the idea of comparative advantage is not immediately intuitive, the best way of presenting it seems to be with an explicit numerical example as provided by David Ricardo⁵⁵, in 1817. He thus imagined two countries, England and Portugal, producing two different types of goods, cloth and wine, using labour as the sole input in production.

In the Ricardian model, countries are assumed to differ only in their productive capacities. It was in this model that David Ricardo first formally demonstrated the principle of comparative advantage. When defined in terms of productivity differences, comparative advantage is regularly confused with a simpler concept that economists call absolute advantage. It is worth taking a few moments to illustrate the differences. For example, if the US has higher productivity in corn production compared to Switzerland, while Switzerland has higher productivity in watch production compared to the US, economists would say the US has an absolute advantage in corn production and Switzerland has an absolute advantage in watch production. In this case it is intuitive that if the US concentrates on corn production and Switzerland on watch production, then resources could be shifted from relatively lower productivity industries to higher productivity industries and the total combined output of corn and watches would rise. With greater output, and after an appropriate trading pattern is introduced, both countries could end up with more of both goods than before, meaning that both countries can gain from trade. For most who have studied economics this is what they remember as comparative advantage. However, they are only partially right.

It is correct that this example of trade is consistent with comparative advantage; however, CA also covers cases that are less obviously advantageous for countries. For example, one might ask what happens if the US had higher productivity in both corn and watches compared to Switzerland. This is the question that Ricardo tackled when he formalised CA. His answer to the question also substantially expanded the number of situations in which technology differences could result in advantageous trade.

Ricardo's simple analysis demonstrated that even when one country is technologically superior in both goods, it could still be advantageous for countries to trade⁵⁶. In this

⁵⁵RICARDO (D)., *The principles of political economy and taxation*, 1817.

⁵⁶BERNANKE (B)., "Ricardo's theory of international trade" cited in <http://critiqueofcrisistheory.wordpress.com/ricardos-theory-of-international-trade/#fn2>

circumstance, a comparative advantage is present for those products that the country can produce most best in comparison to other countries, even if the most best product is produced less productively than in the other country.

Ricardo assumed that the productivity of labour (i.e., the quantity of output produced per worker) varied between industries and across countries. However, instead of assuming, as Adam Smith did, that England is more productive in producing one good and Portugal is more productive in the other; Ricardo assumed that Portugal was more productive in both goods. Based on Smith's intuition, then, it would seem that trade could not be advantageous, at least for England.

The Example of England and Portugal

Ricardo demonstrated numerically that if England specialised in producing one of the two goods and if Portugal produced the other, then the total world output of both goods could rise. If appropriate terms of trade (i.e., amount of one good traded for another) were then chosen, both countries could end up with more of both goods after specialisation and free trade than they each had before trading. This means that England may nevertheless benefit from free trade even though it is assumed to be technologically inferior to Portugal in the production of everything.

As it turned out, specialisation in *any* good would not suffice to guarantee the improvement in world output. Only one of the goods would work. Ricardo showed that the specialisation good in each country should be that good in which the country had a comparative advantage in production. To identify a country's comparative advantage good, it requires a comparison of production costs across countries. However, one does not compare the monetary costs of production or even the resource costs (labour needed per unit of output) of production. Instead one must compare the *opportunity* costs of producing goods across countries.

A country is said to have a comparative advantage in the production of a good (example of cloth) if it can produce cloth at a lower opportunity cost than another country. The opportunity cost of cloth production is defined as the amount of wine that must be given up in order to produce one more unit of cloth. Thus England would have the comparative advantage in cloth production relative to Portugal if it must give up less wine to produce

another unit of cloth than the amount of wine that Portugal would have to give up to produce another unit of cloth.

All in all, this condition is rather confusing. Suffice it to say, that it is quite possible, indeed likely, that although England may be less productive in producing both goods relative to Portugal, it will nonetheless have a comparative advantage in the production of one of the two goods. Indeed there is only one circumstance in which England would not have a comparative advantage in either good, and in this case Portugal also would not have a comparative advantage in either good. In other words, either each country has the comparative advantage in one of the two goods or neither country has a comparative advantage in anything.

Another way to define comparative advantage is by comparing productivities across industries and countries. Thus suppose, as before, that Portugal is more productive than England in the production of both cloth and wine. If Portugal is twice as productive in cloth production relative to England but three times as productive in wine, then Portugal's comparative advantage is in wine, the good in which its productivity advantage is greatest. Similarly, England's comparative advantage good is cloth, the good in which its productivity disadvantage is least. This implies that *to benefit from specialisation and free trade, Portugal should specialise and trade the good in which it is "most best" at producing, while England should specialise and trade the good in which it is "least worse" at producing.*

Note that trade based on comparative advantage does not contradict Adam Smith's notion of advantageous trade based on absolute advantage. If as in Smith's example, England were more productive in cloth production and Portugal were more productive in wine, then we would say that England has an absolute advantage in cloth production while Portugal has an absolute advantage in wine. If we calculated comparative advantages, then England would also have the comparative advantage in cloth and Portugal would have the comparative advantage in wine. In this case, gains from trade could be realised if both countries specialised in their comparative, and absolute, advantage goods. Advantageous trade based on comparative advantage, then, covers a larger set of circumstances while still including the case of absolute advantage and hence is a more general theory.

Therefore, according to theoretical implications of comparative advantage, it can be implied that if countries are permitted to trade freely (and actually, even if that trade is restricted), and if they have competitive, undistorted markets, then they will export the good or goods in which they have comparative advantage and import those in which they have comparative disadvantage. And under the same conditions, all countries will gain from trade, in the sense that those individuals who gain from trade within each country will gain enough that they could potentially fully compensate those individuals who lose, within the same country, and still remain better off than in autarchy⁵⁷.

3.3.3 Interpreting the Theory of Comparative Advantage in Services

The usual way of stating the Ricardian model results is to state that countries *will* specialise in their comparative advantage goods or services, and trade them to the other country such that everyone in both countries can benefit from it.

It can be agreed from the Ricardian model that *if we want to maximise total output in the world then, **first**, fully employ all resources worldwide; **second**, allocate those resources within countries to each country's comparative advantage industries; and **third**, allow the countries to trade freely thereafter.*

In this way we might raise the well-being of all individuals despite differences in relative productivities. In this description, we do not predict that a result will carry over to the complex real world. Instead we carry the logic of comparative advantage to the real world and ask how things would have to look to achieve a certain result (maximum output and benefits). In the end we should not say that the model of comparative advantage tells us anything about what *will* happen when two countries begin to trade; instead we should say that the theory tells us some things that *can* happen.

⁵⁷DEARDORFF (A)., “Introduction to comparative advantage”. Econ 340, August 2003 cited in <http://www-personal.umich.edu/~alandear/writings/CompAdv3.pdf>

3.3.4 The Ricardian Model - Assumptions and Results

The modern version of the Ricardian model and its results are typically presented by constructing and analysing an economic model of an international economy. In its most simple form, the model assumes two countries producing two goods using labour as the only factor of production. Goods are assumed homogeneous (i.e., identical) across firms and countries. Labour is homogeneous within a country but heterogeneous (non-identical) across countries. Goods can be transported costless between countries. Labor can be reallocated costless between industries within a country but cannot move between countries. Labor is always fully employed. Production technology differences exist across industries and across countries and are reflected in labour productivity parameters. The labour and goods markets are assumed to be perfectly competitive in both countries. Firms are assumed to maximise profit while consumers (workers) are assumed to maximise utility.

The primary issue in the analysis of this model is what happens when each country moves from autarchy (no trade) to free trade with the other country - in other words, what are the effects of trade? The main things it focuses on is the effects of trade on prices of goods in each country, the production levels of the goods, employment levels in each industry, the pattern of trade (who exports and who imports what), consumption levels in each country, wages and incomes, and the welfare effects both nationally and individually.

Using the model one can show that, in autarchy, each country will produce some of each good. Because of the technology differences, relative prices of the two goods will differ between countries. The price of each country's comparative advantage good will be lower than the price of the same good in the other country. If one country has an absolute advantage in the production of both goods (as assumed by Ricardo) then real wages of workers (i.e., the purchasing power of wages) in that country will be higher in both industries compared to wages in the other country. In other words, workers in the technologically advanced country would enjoy a higher standard of living than in the technologically inferior country. The reason for this is that wages are based on productivity, thus in the country that is more productive, workers get higher wages⁵⁸.

⁵⁸RUFFIN (R.J) "The Missing Link: The Ricardian Approach to the Factor Endowments Theory of Trade", *American Economic Review* 78, 759-772, 1988

The next step in the analysis is to assume that trade between countries is suddenly liberalised and made free. The initial differences in relative prices of the goods between countries in autarchy will stimulate trade between the countries. Since the differences in prices arise directly out of differences in technology between countries, it is the differences in technology that cause trade in the model⁵⁹. Profit-seeking firms in each country's comparative advantage industry would recognise that the price of their good is higher in the other country. Since transportation costs are zero, more profit can be made through export than with sales domestically.

Thus each country would export the good in which they have a comparative advantage. Trade flows would increase until the price of each good is equal across countries. In the end, the price of each country's export good (its comparative advantage good) will rise and the price of its import good (its comparative disadvantage good) will fall.

The higher price received for each country's comparative advantage good would lead each country to specialise in that good. To accomplish this, labour would have to move from the comparative disadvantaged industry into the comparative advantage industry. This means that one industry goes out of business in each country. However, because the model assumes full employment and costless mobility of labour, all of these workers are immediately gainfully employed in the other industry. One striking result here is that even when one country is technologically superior to the other in both industries, one of these industries would go out of business when opening to free trade.

Therefore, technological superiority is not enough to guarantee continued production of a good in free trade. A country must have a comparative advantage in production of a good, rather than an absolute advantage, to guarantee continued production in free trade. From the perspective of a less developed country, the developed countries' superior technology need not imply that LDC industries cannot compete in international markets.

Another striking result is that the technologically superior country's comparative advantage industry survives while the same industry disappears in the other country, even though the worker in the other country's industry has lower wages. In other words, low wages in another country in a particular industry is not sufficient information to know

⁵⁹DOMBUSCH (R), FISCHER (S), et SAMUELSON (P.A), "Comparative Advantage, Trade, and Payments in a Ricardian Model with a Continuum of Goods", *American Economic Review* 65, 297-308, 1977. cited in <http://www.colorado.edu/Economics/courses/fall09-4413-003/ch7-new.pdf>

which country's industry would perish under free trade. From the perspective of a developed country, *free trade may not result in a domestic industry's decline just because the foreign firms pay their workers lower wages.*

The movement to free trade generates an improvement in welfare in both countries both individually and nationally. Specialisation and trade will increase the set of consumption possibilities, compared with autarchy, and will make possible an increase in consumption of both goods, nationally. These aggregate gains are often described as improvements in production and consumption efficiency. Free trade raises aggregate world production efficiency because more of both goods are likely to be produced with the same number of workers. Free trade also improves aggregate consumption efficiency, which implies that consumers have a more pleasing set of choices and prices available to them. Real wages (and incomes) of individual workers are also shown to rise in both countries. Thus, every worker can consume more of both goods in free trade compared with autarchy. In short, everybody benefits from free trade in both countries. In the Ricardian model, trade is truly a win-win situation.

3.3.5 Conclusions on the Ricardian model

The most important conclusion that can be drawn from the Ricardian model is that advantages generated by trade do not disappear just because another country has lower wages; nor do they disappear just because another country is more productive in everything. Ricardo demonstrated that by specialising in producing the products that one has a comparative advantage in (which may not be ones in which the country has an absolute advantage) the world can expand its total output with the same quantity of resources. The expansion of output is the realisation of increased economic efficiency that economists constantly talk about. Finally, given the expanded output, international trade can assure that all countries in the model gain from the surplus that is created. In other words, without raising the quantity of resources, the world economy would be able to produce greater output and generate higher living standards for everyone. Economic efficiency will rise both internationally and nationally. This is how all nations can benefit from free trade.

It is important to note at this stage that the Ricardian model does not say that countries will gain from international trade; only that countries can benefit from increased output and trade if production is reorganised between countries appropriately while all resources are kept fully employed. The model is a gross simplification compared to the real world though, and thus it clearly does not incorporate all the parameters that might exist in trade. Nevertheless the model does provide an insight that quite likely carries over to more complex situations.

For example, the model results should cause observers of international trade situations to hesitate when fears grow that low wage country may soon take over production of the world's output, or when developing countries protect their markets because of fears that they cannot compete with the more developed countries in the world. These commonly expressed fears about international trade are shown, by virtue of the Ricardian model, to be based on a false perception.

3.3.6 Comparative Advantage in Tourism

The theory of comparative advantages can be applied to the conditions of production of services in the tourism sector. Many developing countries, in particular LDCS, have abundance in low wage labour. From this point of view, these countries where the tourism sector can benefit from a high capacity of work, with very low wages, should be able to produce tourism services with a comparative advantage based on very competitive production costs. These comparative advantages should also allow developing countries and especially LDCS, to reinforce their participation in global tourism. They could in particular make efficient use of a research towards greater differentiation of their products, based on the developments of traditional know-how and technology.

Many researches are nowadays available and which focus on the development of tourism destinations. Dwyer and Forsyth (1994)⁶⁰ analyse the impact of foreign investment in tourism and show that foreign investment plays a positive role in attracting foreign

⁶⁰DWYER, LARRY, FORSYTH (P). *Foreign tourism investment – motivation and impact*, Annals of Tourism Research, 21(3): 1994, 512-537.

tourism flows and expenditure to the destination country. Dwyer et al. (2000)⁶¹ examine the price competitiveness of travel and tourism in nineteen destination countries. Murphy et al. (2000)⁶² relate the destination products to destination competitiveness. They come to the conclusion that several supply-side related aspects, such as quality, destination environment, destination infrastructure and value can influence tourists' intention to return. Well-defined competitiveness indices (both travel cost and ground cost) which influence the decision of travelling to a destination country are compared among these countries.

Prideaux (2000) shows that the transportation system plays a significant role in the development of a destination country. He also mentions that transport is a significant factor in both the development of the destination country and the type of market this country competes in. Geyikdagi (1995) uses Turkey as a case study to investigate Turkish tourism demand from the main tourism market. He applies the traditional tourism-demand model by using real disposable income per capita in the original countries, the travel cost, and bilateral exchange rates, among other data. However, he adds one variable, i.e. the gross fixed investment in the Turkish tourism sector into the model to represent the supply variable.

The results show that this supply variable has a greater impact on tourism flows than any of the other traditional demand-related variables. Through the upgrading of quality and quantity of accommodation establishments (*technology factors*) and the provision of new transport facilities (new airports and motorways) tourists have been attracted to Turkey in greater numbers according to these results.

The important feature in those researches is that they use efficiency and productivity (i.e. comparative advantage) to show the competitiveness among destination countries, thus showing that the destination country in itself also plays an important role in attracting tourism flows to its sites. The examples of research results above are clearly supportive of an implementation of the comparative advantage theory in terms of supply-side oriented approach compared to more traditional tourism-demand studies. They also confirm that supply-side aspects often play an important role in attracting tourists.

⁶¹DWYER, LARRY, FORSYTH (P) & RAO (P). *The price competitiveness of travel and tourism: a comparison of 19 destinations*, Tourism Management, 2000, pp 9-22.

⁶²MURPHY (P), PRITCHARD (M) (P), & SMITH (B). *The destination product and its impact on traveller perceptions*, Tourism Management, 2000, pp 43-52.

3.4 Heckcher&Ohlin's Theory and Technology Factor

According to the empirical experience of Heckcher&Ohlin⁶³, relative endowments of the factors of production (Factor endowment), land, labour, and capital determine a country's comparative advantage. Countries have comparative advantages in those goods for which the required factors of production are relatively abundant locally. This is because the profitability of goods is determined by input costs. Goods that require inputs that are locally abundant will be cheaper to produce than goods that require inputs that are locally scarce.

For example, a country where capital and land are abundant but labour is scarce will have comparative advantage in goods that require lots of capital and land, but little labour for the production of grain. If capital and land are abundant, their prices will be low. As they are the main factors used in the production of grain, the price of grain will also be low and thus attractive for both local consumption and export. Labor intensive goods on the other hand will be very expensive to produce since labour is scarce and its price is high. Therefore, the country is better off importing those goods.

Ricardo's model as well as Heckscher&Ohlin's explain trade flows according to their productive efficiency (technology in Ricardo) or the relatively available resource endowments of countries (the H-O theory assumes that all countries have access to the same technologies). According to these theories, it is the differences in technology advancements and endowments which are the prime motivators or underlying causes for international trade. In practice, the differences in productive capacities cause relative product prices to deviate a lot in a state of autarky. When barriers to trade are dismantled, such large price differences are no longer justifiable and countries will start to trade until gross prices even out across countries. The reason why goods are more affordable in some countries compared to others is due to the comparative advantage of each country which refers back to their unique endowments or technologies.

While the Heckscher-Ohlin theory has lost in significance with the industrial and especially the IT revolution and the following decline in role of natural resources relative to knowledge (created assets) in the production process, the Ricardian theory, and perhaps due to its unwillingness to delve further into specific explanations for differences in

⁶³HECKSCHER (E) & OHLIN (B)., *Heckcher-Ohlin model (H-O Model)*, 1919.

efficiency, remains as universally valid as ever before. However, the more recent developments of late 20th century trade theories also point to diverging views of the relative importance of private and public aspects in creating the efficiency differences that arise across countries.⁶⁴

The new trade theories give a central role in the increasing returns argument to these efficiency differences (Romer, 1986). But it depends a lot on the source whether the increasing returns are firm-specific (internalised) or arise through broader social processes of learning and externalities. One direction in the newer trade literature centres on the multinational enterprise as an important source of superior technology or so-called ownership advantages that render technological leadership to those countries that foster them (home countries) (Markusen, 1995) and also depending on the technology transferred to those countries that host them. Another direction in new trade theory is the role attached to agglomeration economies or industry clusters that are the generators of long-term competitiveness through provision of virtuous circles of superior learning, thick factor markets, better infrastructure and hence better technologies (Ottaviano and Puga, 1998).

Furthermore, Krugman&Obstfeld (2009)⁶⁵ argued in the International economics that *there are three assumptions crucial to the prediction of factor-price equalisation (FPE) which are in reality certainly untrue.* 1). Both countries produce both goods 2). Technologies are the same 3) Trade actually equalised the prices of goods in the two countries.

1). A country with a very high ratio of land to labour might produce only food. This implies that factor-price equalisation occurs only if the countries involved are sufficiently similar in their relative factor endowments.

2). The proposition that trade equalises factor prices will not hold ***if countries have different technologies*** of production. For example, a country with superior technology might have both a higher wage rate and higher rental rate than a country with an inferior technology.

⁶⁴ZHANG (J) & JENSEN (C)., *Comparative Advantage in Tourism, a supply-side analysis of tourism flows*. Amsterdam, The 45th Congress of the European Regional Science Association, 2005, p5.

⁶⁵KRUGMAN (P.) & OBSTFELD (M.)., *International economics: Theory and Policy*, USA, Pearson International Edition 8th edition, 2009, p.69.

3). The proposition of complete factor-price equalisation depends on complete convergence of the prices of goods. In the real world, prices of goods are not fully equalised by international trade. This lack of convergence is due to both natural barriers (such as transportation costs) and barriers to trade such as tariffs, import quotas, and other restrictions.

3.5 An Analysis of LINDER's Hypothesis: the Theory of Demand and International Tourism

LINDER's analysis (1961)⁶⁶ gave out two basic hypotheses. *On one side it features production depending on application conditions.* The emergence of an efficient production comes as a response to a sufficiently strong demand. On the other hand, the condition of demand is understood in the same terms as the “*market which is closest to them*”; the characteristics of this condition have greater expressive value in the domestic market than in foreign markets.

The existence of a representative domestic demand is the prerequisite for export, but it is not a sufficient condition. Products are still developed in response to this request and outside opportunities. International exchange then handles this variety of products belonging to the same class. Therefore, it is of good opportunity for the country to export similar products to its neighbours or on the intra-regional market.

However, there are three hypotheses for international trade related to LINDER theory, which are *condition of product, condition of similar product, and product differentiation.* Even though all countries have similar products, consumers will still choose differentiated products to satisfy their needs.

⁶⁶LINDER (1961), in AUBIN (C) et NOREL (P). *Economie internationale*. Paris, Edition du seuil, 2000, p. 64-66

3.5.1. Condition of Product

In developed countries, international tourism demand enhances an important national tourism demand. This strong domestic representative demand creates favourable conditions for the development of international tourism. Appropriate know-how (learning by doing), technology, and environmentally improved tourism infrastructures give the country a comparative advantage (Vellas, 2007)⁶⁷. As a result, international tourism could undergo strong development in particular in those regions of developed countries which display a high purchasing power.

We can therefore conclude that this condition of demand can bring success within developed and developing country specifically because these countries display a high potential in domestic demand and a high purchase power. On the other hand, least developed and small countries (Singapore, Belgium, Luxemburg, Caribbean Island Countries, for example) have less of a potential in terms of purchasing since their volume of domestic demand is insufficient for the development of tourism. As far as technology is concerned, it is clear that these countries need a proper level of technology to reach a satisfying development in tourism infrastructure.

3.5.2. Condition of Similar Product

According to the theory of international specialisation, countries that have a potential for developing a competitive product at a national level, should incidentally have a potential for competitive trade and exportation on a global level. Once proven competitive at a national level, these products should be exported to other countries. However, tourism products are quite different from industrial products and do not fall into the same categories of heterogeneous and homogeneous items.

⁶⁷VELLAS (F.), *Economie et politique du tourisme international* 2^e édition, Paris, ECONOMICA, 2007.

3.5.3. Product Differentiation

As indicated by Linder: “*the field of similar products makes it possible to trade with a country where differentiated products can be created*”⁶⁸ According to this idea, merchandisers should be able to create differentiated products within the same product fields. In the tourism area for example, even though products and attractions are very similar in tourist regions, customers still express the need to escape to other destinations.

⁶⁸LINDER (1961), in AUBIN (C) et NOREL (P). *Economie internationale*. Paris, Edition du seuil, 2000, p. 64-66

3.6 Trade Theories and Application in Tourism

Trade Theories	Their Explanation	Application in Tourism	Application in Technology	Application in Technology & Tourism
Ricardo Theory	Comparative Advantage in production	Price Competition among Tourism Destination Countries	Low technological impact	Effective on tourism Production/Human Resources
Heckcher-Ohlin	Natural Endowments (Capital, Land, Labour)	Mass Tourism (Sea, Sand, Sun)/ Cultural Advantage	Low technological impact	Effective on Human Resources of Hospitality/ products (tourism destination)
Linder	Similarity Preferences/ Intra Region	-Domestic-Region Tourism/ Specific Tourism -Explains Industrial products and activities	Technology can explain and add value to goods and services	High purchasing power in domestic tourism/ Differentiation in similar products
Multinational Firms (Hennart)	FDI/ Ownership Advantage/Firm-Specific Technology	International Hotel Chains	Reliability in standards of hotel chains	More convenience for customers

Table 6: Trade Theories and Application in Tourism

Trade theories can be applied both to services and tourism. Tourists choosing to visit one country may do it because of cultural affinities such as pilgrimage tourism; they may be attracted by the natural endowments, such as sun, sand and sea, which is what motivates island tourism, or the cultural heritage. The relative price competitiveness of tourism products in the destination country compared to other competing destination countries can also be the cause of tourism flows (one aspect where there is a clear overlap between demand models and Ricardian trade theory).

*In conclusion, multinational firms in tourism and hospitality (FDI in hotels in the destination countries) have benefited from the reputation, branding and product recognition to attract guests and tourists to the countries where they invest. In many countries, especially developing countries, they have realised that developing tourism infrastructures and improvements in hotel facilities are significant factors towards attracting more tourism. On the technological point of view, many developing countries cannot meet the need for tourism development because of their initially insufficient tourism products. They need to invest in order to improve the quality of their tourism products, hotel facilities, restaurants, tourism accessibility, and infrastructure (airports, means of transportation, etc). New technologies oriented towards hotels, restaurants, or attractions, such as computer reservation systems (CRS), and internet marketing such as online booking, clearly facilitate tourist access in the concerned destination. We can **therefore come to the conclusion that new technologies play an essential role in attracting tourists.***

CHAPTER 4: TECHNOLOGICAL FACTORS IN PRODUCT LIFE CYCLE AND INTERNATIONAL TOURISM SPECIALISATION

4.1 An Approach to Multinational Firms (MNFs) in International Tourism

A multinational firm is defined as being an enterprise that controls and manages production establishments located in at least two countries⁶⁹. The term “enterprise” is used instead of “company” to draw the attention on the top level of coordination inherent to the hierarchy of business decision. A company, even a multinational one, may be a controlled subsidiary of another firm.

Strategies of multinational firms can be analysed according to two basic constituting elements. The first one is a set of firm-specific factors which determine the competitive advantages of a given organisation and are called Firm Specific Advantages (FSAs). An FSA is defined as a unique ability specific to an organisation. It may be based on product or process technology, marketing or distribution skills, or managerial know-how. The second element consists in country specific factors which are unique to the business environment in each country and can therefore lead to country-specific advantages (CSAs)⁷⁰.

The CSA can be based on natural-resource endowments (minerals, energy, forests), on the labour force, or on less tangible factors that include education and skills, institutional protections of intellectual property, entrepreneurial dynamism, or other factors unique to a given country. Managers among most multinational firms use strategies based on the interactions between CSAs and FSAs in order to occupy a unique position in the strategic space. CSAs represent the natural factor endowments of a nation or those that are developed or acquired as part of government or other investments.

The FSAs possessed by a firm are based on its internationalisation of an asset, such as production knowledge, and managerial or marketing capabilities, over which the firm has proprietary control. FSAs are thus related to the firm’s ability to coordinate the use of the

⁶⁹CAVES (E)., *Multinational enterprise and economic analysis*, Cambridge University Press: London, 1985, pp 1-3.

⁷⁰RUGMAN (A) & DOH (J)., *Multinational Development*, New Haven& London, Yale University Press, 2008.

advantages in production, marketing, or the customisation of services. To help formulate the strategic options of MNFs, it is useful to identify the relative strengths and weaknesses of CSAs and FSAs that MNFs possess. The FSA-CSA matrix in figure 1 provides a useful framework for these issues, but it should also be emphasised that the “strengths” or “weaknesses” of FSAs or CSAs are relative notions. They depend on the relevant market and on the CSAs and FSAs of potential competitors.

A strong FSA implies that under identical CSA, a firm has a potential competitive advantage over its rivals.

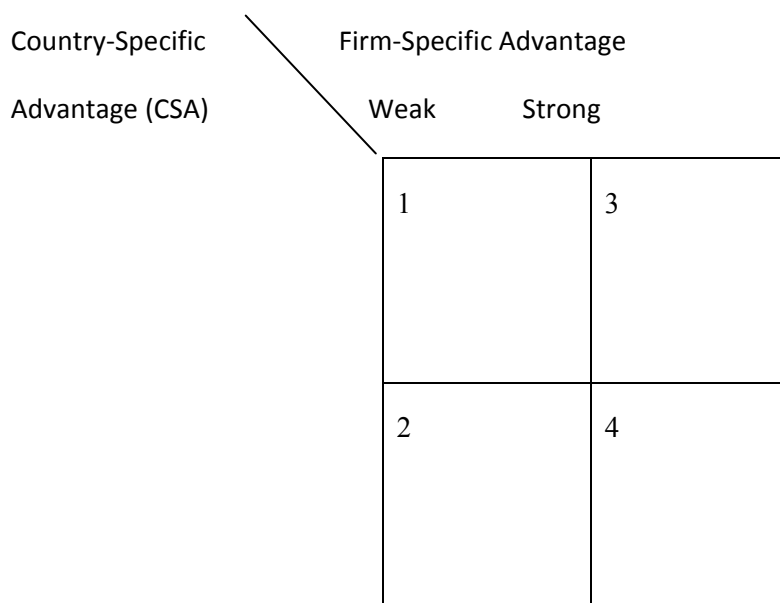


Figure 11: The FSA-CSA Matrix
Source: Rugman and Doh (2008), Multinational development

4.1.1 Spillovers, Technology Transfer, and Linkages in Tourism

A broad body of literature argues that tourism multinational enterprises (MNEs) contribute to economic development by spillovers. Spillovers are external benefits brought to the host country through inward foreign direct investment (FDI) and the associated presence of foreign MNEs. Basically, these tourism and services MNEs normally have production systems that embody more advanced technology than is found, on average, within the host country.

At the most basic level of economics, a transfer of technology to local consumers occurs when they purchase the goods and services provided by the more technologically advanced foreign MNEs. Indeed, it has been revealed that local firms frequently fail to develop and commercialise new technologies and that foreign MNEs overcome this technological gap within poor host countries. Tourism MNEs also transfer their management skills and thereby transfer knowledge and learning ability to host countries.

The modern theory on MNE, incorporated within the FSA-CSA matrix⁷¹ shows that FSAs will be internalised by the MNE and thereby partially transferred to host-country consumers through subsidiary production in that country. There may also be a direct transfer of technology and skills to local managers and workers through local production by MNEs. Since the evidence shows that well over 90 percent of the employees of a subsidiary are from the local country, it is clear that the potential for skill transfer exists once MNEs enter a poor country.

Analyses of the technological spillover impact of FDI on host economies have typically assumed the impact to be the outcome of two linked steps. Firstly, it implies that the MNE parent-to-subsidary international transfer of technology is superior to the prevailing technology in the host economy. Secondly, it implies a subsequent spread of this technology to domestic firms as an effect of this technological spillover (Gorg & Strobl 2001; Lipsey 2004, cited in Rugman&Doh 1981).

As far as knowledge spillovers⁷² are concerned, it is described that tourism companies can acquire technology through their own research and development efforts. They can also try to learn from competitors by studying their products. An important source of technical know-how, however, is the informal exchange of information and idea that takes place at a personal level. And this kind of informal diffusion of knowledge often seems to take place most effectively when an industry is concentrated in a fairly small area, so that employees of different companies mix socially and talk freely about technical issues.

⁷¹RUGMAN (A) & DOH (J)., *Multinational Development*, New Haven& London, Yale University Press, 2008.

⁷²MARSHALL (A)., *Principal of economics*, Macmillan, London, 1920.

4.1.2 Barriers to the Entry of Services into a Country

In each country, governments have an incentive to implement strategic trade policies (Krugman, 1989a)⁷³. Strategic policies aim to help firms of their own nationality to achieve higher export earnings and/or to decrease outflows of foreign currency in payment for goods and services produced abroad. They include strategic commercial policy in the form of export credits or subsidies or import tariffs.

However, all estimated gravity models show a strong negative effect of distance on international trade, typical estimates say that a 1 percent increase in the distance between two countries is associated with a fall of 0.7 to 1 percent in the trade between those countries.⁷⁴ This drop partly reflects increased *costs in the transportation of goods and services*. Economists also believe that less tangible factors play a crucial role: Trade tends to be intense when countries have close personal contact, and this contact tends to diminish when distances are large. For example, why do the United States' North American neighbours trade so much more with the United States than its European partners? One main reason is the simple fact that Canada and Mexico are closer. It is easy for a U.S. sales representative to pay a quick visit to Toronto, it is a much bigger project for that representative to go to Paris. In addition to being U.S. neighbours, Canada and Mexico are part of a trade agreement with the United States, the North American Free Trade Agreement (NAFTA), which ensures that most goods shipped among the three countries are not subject to tariffs or other barriers to international trade. While trade agreements often end all formal barriers to trade between countries, they rarely make national borders irrelevant.

Recent economic research has shown that even when most goods and services shipped across a national border pay no tariffs and face few legal restrictions, there is much more trade between regions of the same country than between equivalently situated regions in different countries. The Canadian-U.S. border is a case in point. The two countries are part of a free trade agreement (indeed, there was a Canadian-U.S. free trade even before NAFTA), most Canadian speak English and the citizens of either country are free to cross the border with a minimum of formalities. Yet data on the trade of individual Canadian

⁷³ KRUGMAN (P.R.), *Industrial organization and international trade* cited in Schmalensee, R. and Wilig, R.D. (eds) *Handbook of Industrial Organization*, Amsterdam: North Holland, 1989.

⁷⁴ KRUGMAN (P.) & OBSTFELD (M.), *International economics: Theory and Policy*, USA, Pearson International Edition 7th edition, 2006, p.12-19.

provinces both with each other and with U.S. states show that, other things equal, there is much more trade between provinces than between provinces and U.S. states.

It can be established that in practice, it is difficult for developing countries to gain advantage, as competitive initiatives usually come from developed countries which have greater expertise in establishing price and supply.

4.2 Foreign Direct Investment (FDI) and International Tourism

The key point between international tourism economics and the MNF arises from the export of equity to the foreign nation that occurs when a tourism company starts a foreign subsidiary. International flows of capital are a central concern of international economics, and economists working in this field have long tended to explain the MNF as being simply an arbitrageur of capital (an entity involved in arbitrage purchases securities in one market for immediate resale in another in the hope of making profit from the price differential)⁷⁵. The MNF seeks for profits by moving equity capital from countries where its return is low to countries where it is higher. The firm's profits thus result from an arbitrage activity.

At an empirical level, MNFs in the tourism sector should therefore be mainly based in countries best endowed with capital and where the domestic marginal productivity is the lowest. They should be moving capital towards countries less endowed with capital and with higher marginal products of capital. However, this hypothesis is contradicted by Hymer (1976)⁷⁶ who argued that capital arbitrage was inconsistent with several obvious patterns in the behaviour of MNFs.

1). The long term standard pattern of capital flows to and from the USA, for example has shown inflows of portfolio capital are not balanced with net exports. Therefore, Hymer argued with this hypothesis and has the question that how can capital flows be equated between exports and inflows in USA.

2). MNFs move in all directions across national boundaries, and some countries are both home base for many MNFs and host to many subsidiaries controlled abroad. If capital

⁷⁵CAVES (E.), *Multinational enterprise and economic analysis*, Cambridge University Press: London, 1985, pp 1-3.

⁷⁶HYMER (S.H.), *The international operations of national firms: A study of direct foreign investment*. M.I.T Press:M.I.T, 1976, p32.

arbitrage is MNFs' only interest, rates of return to capital should therefore be high in some industrial sectors in some countries and low in others.

3) If FDI is purely an arbitrage of capital, it should imply a large number of financial intermediaries to be prominent participants. However, non-financial companies make up most of the crowd, and the profits they seek in some particular markets hardly have any intimate relationship with long-term rates of interest.

4.2.1 Foreign Direct Investment (FDI) and Tourism Potential

According to Dunning's⁷⁷ conceptual context, the logic which drives FDI in other activities seems to be less apparent in tourism. In the light of this major theoretical approach, a firm will only establish an affiliate in a host country if three factors come together simultaneously. First of all, it has to possess ownership-specific technological or other advantages which allow it to compete effectively with local companies (which are advantaged by being on their home turf). Secondly, there has to be some benefit in locating in the host country (locational advantages such as cheap labour, or local assets such as “sea, sand and sun”, 3S tourism destinations⁷⁸). And lastly, the net benefits of intra-company transactions (i.e. between the company and its foreign affiliate (internalisation)) have to outweigh those of an equivalent market transaction between the company and a firm in the host country. The analytical framework on which this description is based is known as the “OLI (ownership, location, and internalisation) paradigm”. In tourism, it can be noted that the last factor in particular, occurs much less than it does in other economic activities.

The first condition (ownership of competitive advantage(s)) and the third condition (benefits of internalisation) are determinants of whether or not FDI is an attractive strategy in the first place, from the firm's perspective. The second condition is location-specific and has a crucial influence on which countries will appear on the Transnational Corporations (TNC)'s view. This situation applies frequently to hotels, for example, because many of the core assets of the firm in terms of global reputation and management experience can be provided through a management contract, so that equity ownership (establishment of an affiliate) is not essential.

⁷⁷DUNNING (1993)., *Multinational Enterprises and the World Economy* (Wokingham: Addison-Wesley). Cited in UNCTAD, *FDI in Tourism : The Development Dimension*, New York and Geneva, 2007.

⁷⁸“sea, sand and sun” are defined as 3s in tourism destination terms

4.2.2 Franchises System: Hospitality Industry

(a) How franchise system works in hospitality industry

Hotel franchising is globally understanding for the expansion of the integrated hotel chain sector. This system is based on a contract between the franchiser and the franchisee. They comprise the two performances of technology transfers. *The franchiser* brings standard, brand name, experience, and reputation. Moreover, it contributes to the company's success through technical expertise, financial support, management tools, computerised booking system, and marketing performances.

The franchisee has the responsibility to finance the initial investment. The membership fee amounts to approximately 8 to 10% of the investment. Personal funds also have to be supplied, representing approximately 30% of the total investment. Moreover, franchisees are charged 3 to 4 % of turnover depending on the franchise company. On the other hand, they benefit from the standardisation and the profitability of the group and from the commercial and promotional advantages gained by belonging to a group.

As shown in table 6 below, we are presented a list of the major hotel chains held by the world's largest hotel groups. The United States is the largest home country of international hotels, owning 9 groups out of the biggest 15, with the United Kingdom and France coming second, each with 2 groups, and then Germany and Spain. All groups operate internationally in 6 to 100 countries, but 3 of them (2 from the United States, including the largest one, Cendant, and 1 French group) focus on their home markets, with fewer than 10 per cent of their hotels located abroad. The home countries of FDI having hotels in the largest number of developing countries are the United Kingdom, with FDI hotels in at least 65 developing countries, and France, with FDI hotels in at least 61 developing countries. The relatively low presence in LDCs is also obvious, with the exception of the French company Accor.

Global ranking	Group	Home country	Number of rooms	Number of hotels	Share of hotels outside home country ^a (%)	Number of host countries with hotels	Number of host developing countries with hotels	Number of host LDCs with hotels
1	Cendant Corp.	United States	553 771	6 624	6	34	29	-
2	Six Continents Hotels	United Kingdom	507 091	3 234	..	100	65	8
3	Hilton Hotels Corporation	United States	475 000	2 700	15 ^d	82	48	3
4	Marriott International	United States	427 489	2 333	19	66	44	-
5	Accor	France	415 774	3 654	74	90	61	13
6	Choice Hotels International	United States	362 549	4 545	25	47	21	-
7	BestWestern International	United States	312 207	4 109	43 ^b	79	49	1
8	Starwood Hotels & Resorts Worldwide	United States	225 737	751	34 ^b	78	55	4
9	Carlson Hospitality Worldwide	United States	135 429	795	43 ^{b,c}	66	42	2
10	Hyatt Hotels Corp./Hyatt International	United States	91 657	214	>40	39	27	-
11	Sol Meliá SA	Spain	85 515	347	49	30	17	-
12	TUI Group	Germany	75 397	284	>40	29	16	1
13	Envergure/Société du Louvre	France	69 077	940	6	6	-	-
14	Wyndham Hotels Group	United States	62 262	242	11	11	10	-

Table 7: The World's Largest Hotel Groups (ranked by number of rooms)

Source: UNCTAD, *FDI in Tourism : The Development Dimension, 2007*⁷⁹

Significantly, tourism FDI is concentrated primarily in developed countries. This is apparent in terms of tourism related FDI stocks, but it is also visible in terms of the locations of hotels that are part of international hotel chains. It appears that most of hotel chains are located in developed countries, with only a small proportion in developing countries. The fact that tourism is actually “unglobalised” and concentrated in developed countries is at odds with the perception that FDI in tourism is widespread, and even that it dominates the tourism industry in developing countries

(b) What are the limits of the Franchise System?

As said above, the franchise system is one of the most widely used means in the tourism sector to ensure the development of international hotel chains and of technological transfer to developing countries and LDCs. International investors resorting to Foreign Direct Investments (FDI) in LDCs require a return on investment within 3 to 4 years, whereas in reality it is difficult for international chains investing in hotels to obtain results within less than 7 to 8 years. As a result, in most developing countries and LDCs, FDI in the tourism and Hospitality sector is limited to the founding of a few international hotel units in capitals, and sometimes in cities with massive economic activity, as well as some

⁷⁹ UNCTAD, *FDI in Tourism : The Development Dimension*, New York and Geneva, 2007, pp 38

geographically restricted tourist areas. It is therefore insufficient in order to ensure the development of a tourism sector in these countries.

Another interesting issue is the fact that hotel franchising in developing countries is particularly important to make technology transfers possible. However, in the case of LDCs, it is difficult to mobilise local operators likely to fulfil the financial, technical and human requirements of the franchisers⁸⁰.

4.3 The Abernathy&Clark Model and Innovation

Based on the Creative Destruction theory of Schumpeter, technology and innovation in the tourism industry are classified into two dimensions in the “*Abernathy-Clark Model*”⁸¹: intensity of obsolescence of knowledge subsequent to an innovation, and intensity of changes in industry linkages prompted by the innovations. The application to tourism industry is attributed to Anne-Mette Hjalager.

⁸⁰ACTING FOR LIFE., *Handbook for technology transfer in the tourism sector in developing country and least developed countries (LDCs)*. Tourism Ethics and Development Program, Tourism Acting for Life, France, 2009.

⁸¹HJALAGER A.M (2002)., *Repairing innovation defectiveness in tourism, in tourism management, cited in DECELLE (X), .A conceptual and dynamic approach to innovation in tourism*, OECD: Paris, 2004.

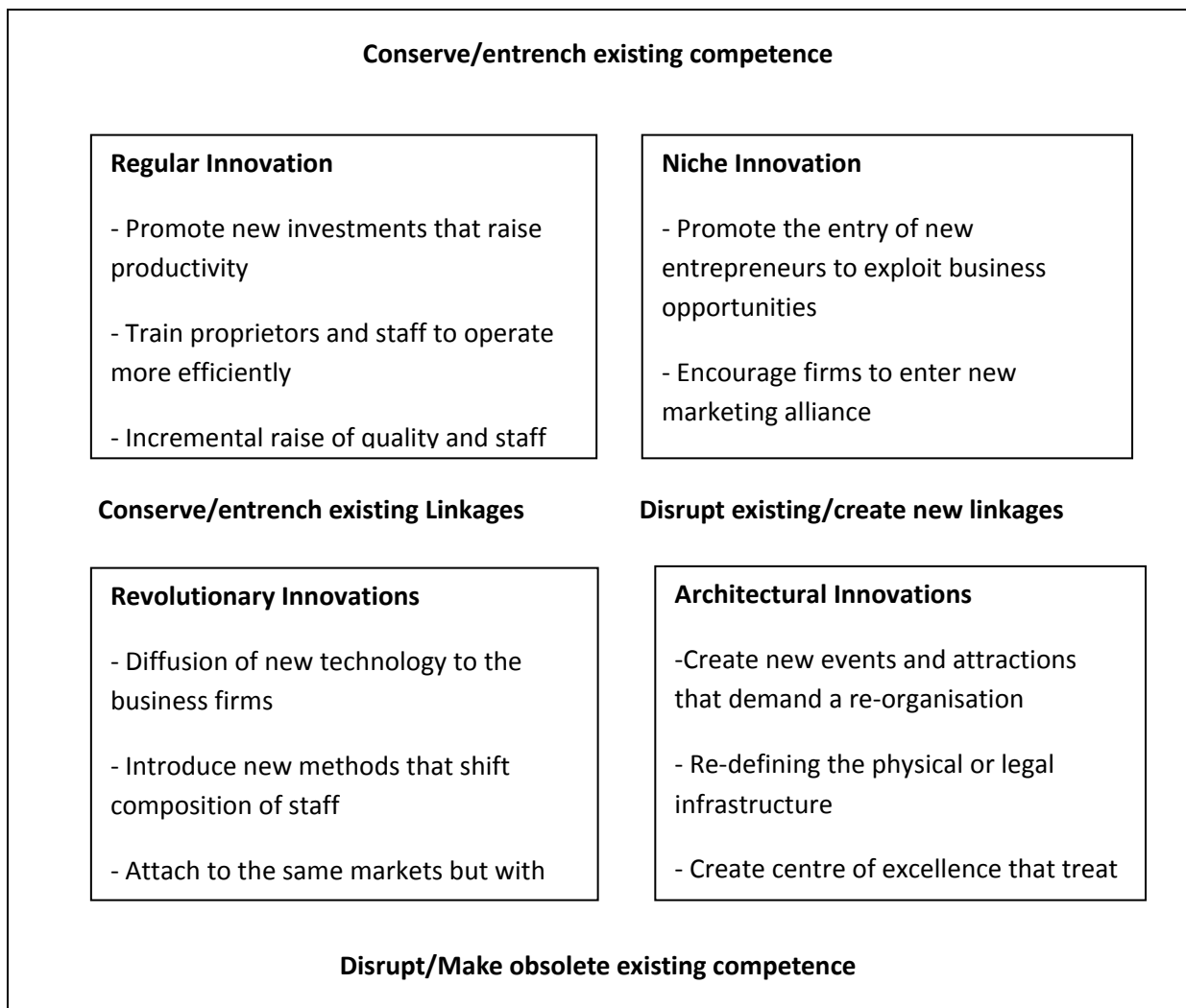


Figure 12: The Abernathy and Clark Model, 2002

The model links the customer to a service provider, and customer's expectations to the means and resources deployed by the provider. One could say that regular and niche innovations appear in the *demand for service*: innovation in the customer's system and product-service innovation, the emphasis being on the customer's expectations of results. On the other hand, revolutionary and architectural innovations appear within the supply of service: process innovation which is either internal or intended to alter the customer/service provider relationship, and innovations in mean of resources, generally intend to rationalise internal operating conditions or to position a service more strategically within total supply.

This differentiation seems to be more suitable, as innovation in tourism is often based on core competencies⁸². Core competencies may comprise internal and/or external factors. Internal resources of the company are the most important determinants regarding positioning and competitive advantages of a company which are difficult to imitate. Gomez&Probst (1995)⁸³ distinguish four types of innovation dealing with either the breaking up or deepening of relationships to clients or to the market and the abandonment or preservation of competencies.

While niche innovations (for example, co-operation with a tour operator) emphasise new forms of co-operation and do not touch existing competencies, architectural innovations (*such as* arctic tourism) introduce new structures and redefine relationships to customers and existing markets. External branch structures and the target groups remain unchanged when a revolutionary innovation is realised, although services have changed by using new technologies. Regular or incremental innovations are realised with existing competencies and existing relationships. Some examples are increased productivity, quality improvements or further training of staff members *e.g.* of a hotel (Hjalager, 2002)⁸⁴. These systematic categories seem to be useful, but the shortened product life cycle noticed in the past decade also has to be recognised. The same is true for innovations, which implies a dynamic change of innovations belonging to one of the four types mentioned above (Abernathy/Clark, 1985)⁸⁵.

⁸²SCHWANINGER(M) & FLASCHKA (M). *Managementsysteme revolutionieren Dienstleistungsunternehmen*, Kaspar, C. (ed.), Jahrbuch der Schweizerischen Tourismuswirtschaft 1994/1995, St. Gallen.

⁸³GOMEZ (P) & PROBST (P).. *Die Praxis des ganzheitlichen Problemlösens*, Haupt, Bern, Stuttgart, Wien., 1995.

⁸⁴HJALAGER (A.M). “*Repairing innovation defectiveness in tourism*”, *Tourism Management*, 23, 2002, pp. 465-474.

⁸⁵ABERNATHY (W). *Innovation: Mapping the Winds of Creative Destruction*, *Research Policy*, 14, 1985, pp. 3-22.

4.4 VERNON's International Product Life Cycle Model (IPLC) and Innovation

In the middle of the 20th century, U.S. trade figures showed that the country had always exported new products with an initial position of monopoly. Later on, overseas production began to replace American exports in some markets, and foreign manufactured products became competitive in overseas markets, further reducing American exports. Eventually, foreign goods were able to compete with U.S. products within the country.⁸⁶

Throughout the century, the trade flow was influenced by innovations and technical update. Based on this flow, Vernon developed the theory of international product life cycle in 1966. Today, his theory has been vastly implemented by MNEs throughout the world. The theory states that a company should locate its production in the original country of invention (i.e. U.S.) during the growth period of the manufacturing process, then the company should gradually move its production to less developed or developing countries once the product has been adopted and proven to be selling on the international market. The company starts by selling its product on the domestic market, then it exports its new product to other advanced countries, and eventually imports its product back to those markets from its own foreign based assembly or manufacturing facilities. However, Vernon's theory relies heavily on the state of the world's economy. Today, international business entered a new century, and the whole world economy has been changed. Hence, international businessmen have to constantly evaluate the continuing utility of Vernon's product life-cycle theory in MNEs.

4.4.1 Vernon's Product Life Cycle and Ricardian Theory

The intent of his International Product Life Cycle model (IPLC) was to advance trade theory beyond David Ricardo's static framework of comparative advantages. In 1817, Ricardo came up with a simple economic experiment to explain the benefits to any country that was engaged in international trade even if it could produce all products at the lowest cost and would seem to have no need to trade with foreign partners. He showed that it was advantageous for a country with an absolute advantage in all product categories to trade and allow its work force to specialise in those categories with the highest added value.

⁸⁶VERNON (R)., *International investment and international trade in the product life cycle*. USA, Quarterly Journal of Economics, 1966.

Raymond Vernon (1966) focused on the dynamics of comparative advantage and drew inspiration from the product life cycle to explain how trade patterns change over time.

The IPLC international trade cycle consists in four stages:

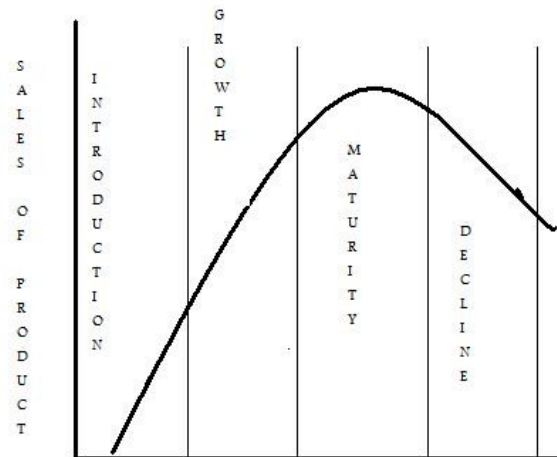


Figure 13: Product Life Cycle Stage of VERNON (1966)

Stage 1: Introduction

The IPLC begins when a company in a developed country wants to exploit a technological breakthrough by launching a new, innovative product on its home market. Such a market is more likely to start in a developed nation because more high-income consumers are able to buy and are willing to experiment with new, expensive products (low price elastic). Furthermore, easier access to capital markets exists to fund new product development. Production is also more likely to start locally in order to minimise risk and uncertainty: “a location in which communication between the markets and the executives directly concerned with the new product is swift and easy, and in which a wide variety of potential types of input that might be needed by the production units are easily come by”.

Export to other industrial countries may occur at the end of this stage that allows the innovator to increase revenue and to increase the downward descent of the product’s experience curve. Other advanced nations have consumers with similar desires and incomes making exporting the easiest first step in an internationalisation effort.

Competition comes from a few local or domestic players that produce their own unique product variations.

Stage 2: Product Growth

Exports to markets in advanced countries further increase through time making it economically possible and sometimes politically necessary to start local production. The product's design and production process becomes increasingly stable. Foreign direct investments (FDI) in production plants drive down unit cost because labour cost and transportation cost decrease. Offshore production facilities are meant to serve local markets that substitute exports from the organisation's home market. Production still requires high-skilled, high paid employees. Competition from local firms jump start in these non-domestic advanced markets. Export orders will begin to come from countries with lower incomes⁸⁷.

As the demand for a product expands, a certain degree of standardisation usually takes place. This is not to say that efforts at product differentiation come to an end. On the contrary; such efforts may even intensify, as competitors try to avoid the full brunt of price competition. Moreover, variety may appear as a result of specialisation. Nevertheless, though the subcategories may multiply and the efforts at product differentiation increase, a growing acceptance of certain general standards seems to be typical. First, of all, the need for flexibility declines. A commitment to some set of product standards opens up technical possibilities for achieving economies of scale through mass output, and encourages long-term commitments to some given process and some fixed set of facilities. Second, concern about production cost begins to take the place of concern about product characteristics.

Empirical studies suggest that, at this stage in an industry's development, there is likely to be considerable shift in the location of production facilities at least as far as internal USA locations are concerned, but international locational shifts simply have not yet been analysed sufficiently to tell us very much.

If the product has a high income elasticity of demand or if it is a satisfactory substitute for high-cost labour, the demand in time will begin to grow quite rapidly in relatively advanced countries such as those of Western Europe. Once the market expands in such an advanced

⁸⁷GLASS (A.J) et SAGGI (K)., *Foreign direct investment and the nature of R&D*. New York: Canadian Journal of Economics, February, Vol. 32, no.1, 1999. Cited in <http://econweb.tamu.edu/aglass/FDICJE.pdf>

country, entrepreneurs will begin to ask themselves whether the time has come to take the risk of setting up a local producing facility. If the producer is an international firm with producing locations in several countries, its costs of financing capital at the different locations may not be sufficiently different to matter very much. If economies of scale are being fully exploited, the principal differences between any two locations are likely to be labour costs. Accordingly, it may prove wise for the international firm to begin servicing third-country markets from the new location.

The decision-making sequence that is used in connection with international investments, according to various empirical studies, is not a model of the rational process. Any threat to the established position of an enterprise is a powerful galvanising force to action; in fact, threat in general is a more reliable stimulus to action than opportunity is likely to be. In the international investment field, threats appear in various forms once a large-scale export business in manufactured products has developed. Local entrepreneurs located in the countries which are the targets of these exports grow restive at the opportunities they are missing. Local governments concerned with generating employment or promoting growth or balancing their trade accounts begin thinking of ways and means to replace the imports. The notion that a threat to the status quo is a powerful galvanising force for international investment also seems to explain what happens after the initial investment.

Stage 3: Maturity

During this phase, the principal markets become saturated. The innovator's original comparative advantage based on functional benefits has eroded. The firm begins to focus on the reduction of process cost rather than the addition of new product features. As a result, the product and its production process become increasingly standardised. This enables further economies of scale and increases the mobility of manufacturing operations. Labour can start to be replaced by capital. "If economies of scale are being fully exploited, the principal difference between any two locations is likely to be labour costs"⁸⁸. To counter price competition and trade barriers or simply to meet local demand, production facilities will relocate to countries with lower incomes. As previously in advanced nations,

⁸⁸REDDY(P)., *Global innovation in emerging economies*. New York: Routledge Studies in Innovation, Organizations, and Technology, 2011. Pp 42. Cited in <http://books.google.co.th/books?id=QV1jd18RbbIC&pg=PA42&lpg=PA42&dq=Maturity+stage+of+vernon&source>

local competitors will get access to first hand information and can start to copy and sell the product.

At an advanced stage in the standardisation of some products, the less-developed countries may offer competitive advantages as a production location. According to Heckscher-Ohlin theorem (1933), one presumably ought to anticipate that the exports of the less-developed countries would tend to be relatively labour-intensive products. As long as knowledge is regarded as a free good, instantaneously available, and as long as individual producers are regarded as atomistic contributors to the total supply, marketing problems cannot be expected to find much of a place in economic theory. In projecting the patterns of export from less-developed areas, however, we cannot afford to disregard the fact that information comes at a cost; and that entrepreneurs are not readily disposed to pay the price of investigating overseas markets of unknown dimensions and unknown promise. Neither are they eager to venture into situations which they know will demand a constant flow of reliable marketing information from remote sources. Of course, foreign investors seeking an optimum location for a captive facility may not have to concern themselves too much with questions of market information; presumably, they are thoroughly familiar with the marketing end of the business and are looking for a low-cost captive source of supply. In that case, the low cost of labour may be the initial attraction drawing the investor to less-developed areas.

Manufacturing processes which receive significant inputs from the local economy, such as skilled labour, repairman, reliable power, spare parts, industrial materials processed according to exact specification, and so on, are less appropriate to the less-developed areas than those that do not have such requirements. In the USA for example, the “export” industries which moved to the low-wage south in search of lower costs tended to be industries which had no great need for sophisticated industrial environment and which produced fairly standardised products. One would have difficulty in thinking of many cases in which manufacturers of standardised products in the more advanced countries had made significant investments in the less-developed countries with a view of exporting such products from those countries. To be sure, other types of foreign investments are not uncommon in the less-developed countries, such as investments in import-replacing industries which were made in the face of a threat of import restriction.

The overall scarcity of capital in the less-developed countries will not prevent investment in facilities for the production of standardised products. Assumption that finance capital is scarce and that interest rates are high in a less-developed country may prove inapplicable to the class of investors who concern us here. The capital markets of the less-developed countries typically consist of a series of a water-tight, insulated, sub-market in which wholly different rates prevail and between which arbitrage opportunities are limited. In some countries, the going figures may vary from 5 to 40 per cent.

Access to capital on the part of underdeveloped countries, becomes a direct function of the country's capacity to propose plausible projects to public international lenders. If a project can plausibly be shown "pay its own way" in balance-of-payment and output terms at "reasonable" interest rates, the largest single obstacle to obtaining capital at such rates has usually been overcome.

The demand of the original product in the domestic country decreases from the arrival of new technologies, and other established markets will have become increasingly price-sensitive. Whatever market is left becomes shared between competitors who are predominately foreign. A MNC will internally maximise "offshore" production to low-wage countries since it can move capital and technology around, but not labour. As a result, the domestic market will have to import relatively capital intensive products from low income countries. The machines that operate these plants often remain in the country where the technology was first invented.

The model helps organisation that are beginning their international expansion or are carrying products that initially require experimentation to understand how the competitive playground changes over time and how their internal workings need to be refitted. The model can be used for product planning purposes in international marketing.

New product development in a country does not occur by chance. A country must have a ready market, an able industrial capability and enough capital or labour to make a new product flourish. No two countries exist with identical local market conditions. Countries with high per capita incomes foster newly invented products. Countries with lower per capita incomes will focus on adapting existing products to create lower priced versions.

The IPLC model was widely adopted as the explanation of the ways industries migrated across borders over time, e.g. the textile industry. Furthermore, Vernon was able to explain

the logic of an advanced, high income country such as the USA that exports slightly more labour-intensive goods than those that are subject to competition from abroad.

According to Vernon, most managers are “myopic”. Production is only moved outside the home market when a “triggering event” occurs that threatens export such as a new local competitor or new trade tariffs. Managers act when the threat has become greater than the risk in or uncertainty from reallocating operations abroad.

4.4.2 Technological Roles in Vernon Assumption

Vernon’s main assumption was that the diffusion process of a new technology occurs slowly enough to generate temporary differences between countries in their access and use of new technologies. By the late 1970’s, he recognised that this assumption was no longer valid. Income differences between advanced nations had dropped significantly, competitors were able to imitate product at much higher speeds than previously envisioned and MNCs had built up an existing global network of production facilities that enabled them to launch products in multiple markets simultaneously. Investments in an existing portfolio of production facilities made it harder to relocate plants.

The model assumed integrated firms that begin producing in one nation, followed by exporting and then building facilities abroad. The business landscape had become much more interrelated since the 1950’s and early 1960’s, less US-centric and created more complex organisational structures and supplier relations. The trade-off between export or foreign direct investments was too simplistic: more entry modes exist. The model assumed that technology can be captured in capital equipment and standard operating procedures. This assumption underpinned the discussion on labour-intensity, standardisation and unit cost.⁸⁹

The model stated that the stages are separate and sequential in order. Vernon’s Harvard Multinational Enterprise Project that took place from 1963 through 1986, was a massive study of global marketing activities at US, European, Japanese and emerging-nation corporations. The study found that companies design strategies around their product

⁸⁹NITISH (S), SUMIT (K) ., “*Explaining the growth of e-commerce corporations (ECCs): an extension and application of the eclectic paradigm*. Journal of International Business Studies Econ 340, December, 22, 2002 cited in <http://business.highbeam.com/603/article-1G1-95056966/explaining-growth-ecommerce-corporations-extension>

technologies. High-technology producers behave differently from firms with less advanced goods. Companies that invested more R&D to improve their products and to refresh their technologies were able to 'push' these products back to the new product phase.

The relative simplicity of the model makes it difficult to use it as a predictive model that can help anticipate changes. In general, it is difficult to determine the phase of a product in product life cycles. Furthermore, an individual phase reflects the outcome of numerous factors that facilitate or hamper a product's rate of sales making it difficult to see what is happening 'underwater'.

The relation between the organisation and the country level was not well structured. Vernon emphasised the country level. Furthermore, he used the product side of the product life cycle, not the consumer side, thereby stressing the supply side. Selling 'older' products to a lesser developed market does not work if transportation costs for imports is low and information is accessible globally through the Internet and satellite TV. Foreign markets are not just composed of average income consumers, but contain multiple segments. The research did not consider the emergence of global consumer segments.

Stage 4: Product Decline

The last stage of product life cycle is decline stage. The decline stage is marked by a gradual reduction in the demand for the product and hence a gradual reduction in the production as well as the sales. Newly created variants or alternatives will enter the mainstream and drive the old, outdated product out of the market. The market slowly diminishes first in the developed countries and slowly later in the developing countries. For example, if a new fabric is created which masks the problem or the shortcoming of the product it will slowly be phased out and that will be the end of its product life cycle.

4.4.3 The utility of product life cycle theory for Tourism MNEs

Enterprises in any one of the advanced countries of the world are not distinguishably different from those in any other advanced country, in terms of their access to scientific knowledge and their capacity to comprehend scientific principles. But it is a mistake to assume, however, that equal access to scientific principles in all the advanced countries means equal probability of the application of these principles in the generation of new

products. There is ordinarily a large gap between the knowledge of a scientific principle and the embodiment of the principle in a marketable product. An entrepreneur usually has to intervene to accept the risk involved in testing whether the gap can be bridged.

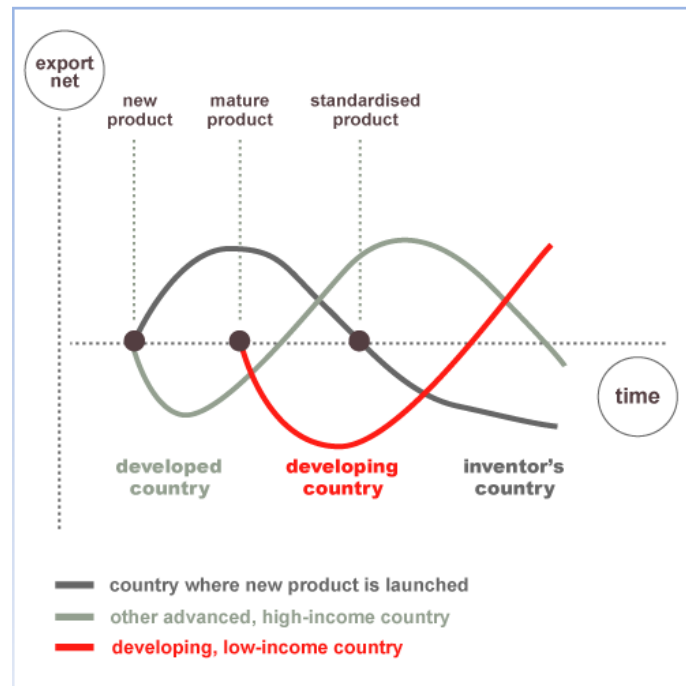


Figure 14: International Product Life Cycle of VERNON (1966)⁹⁰

The fact that the search for knowledge is an inseparable part of the decision-making process and that relative ease of access to knowledge can profoundly affect the outcome is now reasonably well established through empirical research. One implication of that fact is that producers in any market are more likely to be aware of the possibility of introducing new products in that market than producers located elsewhere would be.

Assume, for example, that entrepreneurs in the USA are first aware of opportunities to satisfy new wants associated with high income levels or high unit labour costs. Assume further that the evidence of an unfilled need and the hope of some kind of monopoly windfall for the early starter are sufficiently strong to justify the initial investment that is usually involved in converting an abstract idea into a marketable product. Here we have

⁹⁰ *International Product Life Cycle of Vernon* cited in <http://www.provenmodels.com/583/international-product-life-cycle/raymond-vernon/>

reason for expecting a consistently higher rate of expenditure on product development to be undertaken by USA producers than by producers in other countries, at least in lines which promise to substitute capital for labour or which promise to satisfy high-income wants⁹¹.

Therefore, if USA firms spend more than their foreign counterparts on new product development, it may not be due to some obscure sociological drive for innovation but to more effective communication between the potential market and the potential supplier of the market. Under the calculus of least cost, production need not automatically take place at a location close to the market, unless the product can be produced and delivered from that location at lowest cost. Most major USA companies control facilities situated in one or more locations outside of the USA, the possibility of considering a non-USA location is even more plausible than it might once have been. If prospective producers were to make their locational choices on the basis of least-cost considerations, the USA would not always be ruled out. The costs of international transport and USA import duties, for instance, might be so high as to argue for such location.

A considerable amount of empirical work has been done on the factors affecting the location of industry. Many of these studies try to explain observed locational patterns in conventional cost-minimising terms, by implicit or explicit reference to labour cost and transportation cost. But some explicitly introduce problems of communication and external economies as powerful locational forces.

In the early stages of introduction of a new product, producers were usually confronted with a number of critical, albeit transitory, conditions.

The product itself may be quite unstandardised for a time; its inputs, its processing, and its final specifications may cover a wide range. Producers at this stage are particularly concerned with the degree of freedom they have in changing their inputs. Of course, the cost of the inputs is also relevant. But as long as the nature of these inputs cannot be fixed in advance with assurance, the calculation of cost must take into account the general need for flexibility in any locational choice.

The price elasticity of demand for the output of individual firms is comparatively low. This follows from the high degree of production differentiation, or the existence of monopoly in

⁹¹VERNON (R.), *The technology factor in international trade*: A conference of the Universities-National Bureau Committee for economic research. New York, Columbia University Press, 1970.

the early stages. One result is, of course, that small cost differences count less in the calculations of the entrepreneur than they are likely to count later on. The need for a swift and effective communication on the part of the producer with customers, suppliers, and even competitors is especially high at this stage.

4.4.4 Conclusions on Vernon's IPLC and Technology Factors in International Tourism

Here again, we can come to the conclusion that a process of internationalisation involving a local manufacturer in an advanced country begins by selling a new, technologically advanced product to high-income consumers in its home market. Production capabilities are built locally to stay in close contact with its customers and to minimise risk and uncertainty. As demand from consumers in other markets rises, production increasingly shifts abroad enabling the tourism firm to maximise economies of scale and to bypass trade barriers.

As the tourism product matures and becomes more of a commodity, the number of tourism competitors increases. In the end, the innovator (technology holder) from the advanced nation becomes challenged in its own home market making the advanced nation a net importer of the product. This tourism product is produced either by competitors in lesser developed countries or, if the innovator has developed into a multinational manufacturer, by its foreign based production facilities.

Tourism destinations are products as well. Therefore, they can be considered to have a tourism life cycle. Similarly to other industrial products, destinations are created, marketed, and made available in a competitive environment to tourists (consumers). Over time, destinations decline in attractiveness and number of arrivals. However, there are not disappear from market. Therefore, it is the role of involving stakeholders as well as local people to take a responsibility of this concerned.

As mentioned earlier, technology factors are essential in any kind of production and marketing process. As far as the tourism sector is concerned, technological improvements enable the renewal of the economic basis of the destination. Empirical findings and theoretical analyses indeed show that tourist destinations in developing countries tend to adopt a globalised position and appear to be preferred to destinations in developed

countries, which recalls Vernon's theory on Product Life Cycle. Therefore, it is the responsibility of tourism destination countries to maintain a dominant tourism position by adapting improved technological performances.

Vernon's "Product Life Cycle" theory has proven to be a highly demonstrative tool as to the advantages of high level technology and technology transfer, and it can very easily be adapted to the analysis of international tourism and hospitality entrepreneurs in terms of added value in product quality and product development.

4.5 BUTLER'S Tourism Life Cycle Model and Technological Application

BUTLER's Tourism Life Cycle Model (1980)⁹² is helpful to understand the life cycle of tourism. It comprises several stages such as exploration, involvement, development, consolidation, stagnation, decline, stability, and rejuvenation. Below is its representation:

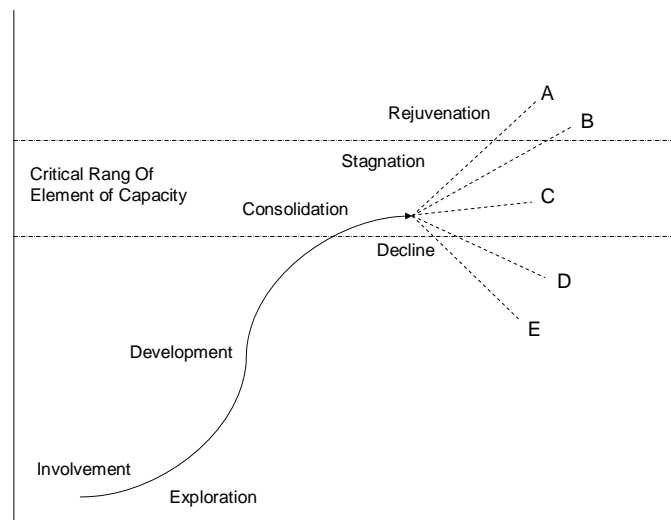


Figure 15: A Tourism Area Cycle of Evaluation

⁹²BUTLER (R.W)., *The concept of a tourist area cycle of evolution. Implications for management of resources.* The Canadian Geographer V XX.V,1: Spring, 1980, 5-12.

The first stage is *exploration*; only a small number of tourists go to the destination, and they can be defined as explorers in the way Cohen (1972)⁹³ describes them. The second stage is called *involvement*. The number of tourists visiting the destination starts increasing. The local area may be involved at this point by providing facilities such as souvenir shops and small restaurants along the beaches. The next stage consists in the *development* phase. The tourist area is being precisely defined, heavy advertising of the destination is provided, and local authorities gradually lose control over the development of the area. An example of this is the rapid increase in the number of hotels and resorts.

The fourth stage, *consolidation*, is the moment when the flow of tourists will start slowing down. At this stage, marketing strategies have to be implemented in order to keep developing the area and attracting customers. At *stagnation stage*, the tourist site reaches its peak number of visitors. It then faces serious issues such as environmental, economic, and social problems. The area enjoys a positive image but is no longer in fashion. The *decline stage* affects areas that will not be able to compete with newer attractions and will not adapt to a declining market. Once the area has solved the problems faced in stagnation stage, it will enter a stage of *rejuvenation*. The different parties involved in the sector, such as local government and the private sector, will attempt to rejuvenate the area by designing a strategy aimed at bringing tourists back into the region.

Interestingly, Butler's Tourism Area Life Cycle has been criticised by various researchers. Ioannides (1992)⁹⁴ indicated that the path of growth of the tourism industry in Cyprus followed Butler's tourist area life cycle. Goncalves and Aguas (1997) concluded that the six stages proposed by Butler were suitable for the examination of how tourism evolved in the Algarve region of Portugal.

A case study on the Isle of Man conducted by Cooper and Jackson (1989) revealed that Butler's tourist area life cycle was a useful descriptive tool for analysing the development of that destination. However, some researchers have reported that Butler's model needed revision or extension when studying alternative forms of tourism. A study by Choy (1992)⁹⁵ suggested that Butler's tourist life cycle was not applicable to most pacific island

⁹³COHEN (E.), *Rethinking the sociology of tourism, annals of tourism research* 6, 1979. p18-35.

⁹⁴IOANNIDES,(D). *Tourism development agents the Cyriot resort cycle*. *Annals of Tourism Research*, 19(4), 1992, pp.711-731

⁹⁵CHOY (D.J.L.), *Life cycle models for pacific island destination*. *Journal of Travel Research*, 30, 1992, pp. 26-31

destinations as it was not able to explain the large variation in growth patterns across various destinations in that region. Foster and Murphy (1991) found that the model provided a good description of early tourism trends of resort retirement communities on Vancouver Island, but that the model failed to explain the later development patterns of those resort communities.

Hovinen (2002)⁹⁶ concluded that Butler's later stages of consolidation and stagnation did not fit well with the empirical evidence he collected from Lancaster County in Pennsylvania. Cohen (1999) also argued that the tourist area life cycle has limitations in explaining the development of ethnic tourism in South-East Asia. Collectively, the literature appears to suggest that Butler's tourist area life cycle may be a very useful conceptual tool for the examination of the development patterns of traditional mass tourism destinations. When the destinations do not fit that description, however, the model begins to show limitations. The type of tourism activity and the region where the destination is located appear to influence the applicability of the model. Choy (1992) and Cohen (1999) argued that the applicability of Butler's model was limited in the Asia Pacific region.

Another Product Life Cycle Model applied to innovative firms is presented by Caccomo and Solonandrasana⁹⁷. This model, in correlation with Butler's model, refers to new tourism products. Presented here in a concise manner, along with its properties and characterisation of the various segments of tourist industry supply, it can be divided in three phases:

Incubation: A small number of innovative firms, demand is still virtual, and innovators rule.

Take-Off: Extension of the market and increase in number of firms, possible imitations and difficulties to effectively protect innovators' intellectual property rights. As market becomes more structured, segmentation, differentiation and branding strategies develop.

Saturation: Limitation of the market and abundance of the product, price competition, and centralising tendencies.

Butler's model on Tourism Area Life Cycle can also be used to specify the technical and economic "age" of such forms of mass tourism.

⁹⁶HOVINEN (G.R.), *Revisiting the destination lifecycle model*. Annals of Tourism Research, 29(1), 2002, pp. 209-230

⁹⁷CACCOMO (J.L) et SOLONANDRASANA (B)., *L'innovation dans l'industrie touristique, enjeux et stratégies*. L'Harmattan, 2001, pp 89.

From the author's point of view, technology currently plays a significant role in all stages of tourism product life cycle. In the example of new destinations, technological factors can help to gain more customers.

*Surprisingly, Butler (1980) was the first one who characterised the evolution of the tourism industry according to the concept of Life Cycle Product, thus following the ideas of Vernon on International product Life Cycle⁹⁸. However, Butler's model can be criticised in the sense that the environmental criteria is an important factor in tourism development, particularly, in tourism destination. In contrast, Butler rarely mentioned the effects of "technology factors" on tourism growth, especially in **international tourism specialisation**. Even though endogenous qualities (attractiveness of natural/cultural resources, for example) are inherent to the destination, exogenous advantages (technology) are also important external factors increasing the destination's accessibility.*

⁹⁸LEON (J.C.), *Endogenous Life Cycle and Optimal Growth in Tourism*. Cited in <http://www.pigliaru.it/chia/Leon.pdf>

PART III: THE ROLE OF TECHNOLOGY IN INTERNATIONAL TRADE IN TOURISM

PART III: THE ROLE OF TECHNOLOGY IN INTERNATIONAL TRADE IN TOURISM

The last two decades, the role of technological innovation was essential. The emerging of new technologies led to the development of new skills, new materials, new services, and new forms of organisation. In tourism, technology created a new form of business called e-tourism, which today is the biggest channel in e-commerce. Thanks to the development of new skills in tourism management (e-marketing), new forms of network organisation emerged particularly in the field of cooperative tourism marketing. They have also been enabled by using new technologies.

The chapter 5 discusses the technological factors related to international tourism and export specialisation. The two key indicators of tourism which are *tourism arrivals and receipts* are crucial factors in order to generate the GDP of the country. It is also importance to seek the correlation between domestic and international tourism demand and supply sides. The tests on technological factors through tourism investment and expenditures will also be analysed in chapter 6.

CHAPTER 5: TECHNOLOGICAL FACTORS IN INTERNATIONAL TOURISM AND EXPORT SPECIALISATION

5.1 Tourism Export (Receipts)

In this topic concerns about tourism flow and trends which is influence to total income as well as to contribute to GDP of the country.

5.1.1 International Tourism Demand Perspective and Technology

The mass tourism market remains fundamental to the growth of many destinations, however, the new challenge for the decision makers of the tourism sector nowadays seems to be the choice between supporting the conventional mass tourism activities or creating the conditions for the development of a new local tourism supply⁹⁹. The multi-motivational nature of holiday decision-making combined with the fact that tourists become more and more sophisticated, seeking increasingly for tourist products that fulfil their particular needs, has increased competition between destinations, fuelling the need to target particular special interest visitors.

Tourist behaviour has changed and new life styles appeared through flexible working times, higher incomes, more leisure time and the changing value of holidays. Basic driving forces for the availability and quality of basic service quality elements are punctuality, accountability, convenience, speed, and price. All other elements like aesthetics, individual attention, and multiple options are secondary elements, which are considered as added features. But these secondary elements in particular create a special “value for money” for the customer¹⁰⁰.

Customer orientation plays a fundamental role in service innovation. Valuable information can be gained from the behaviour of the customer during the service process. As the customer is highly involved in the production of a tourism service, enterprises have to adjust to the changing interests and values of their guests. New products which offer a special or unique value to the customer are more successful than innovation without the

⁹⁹CONTI (G) & PERELLI (C). *Traditional Mass Tourism Destinations: the decline of Fordist tourism facing the rise of vocational diversification. Governance and sustainability in new tourism trends.* available online: http://www.planum.net/topics/documents/Conti_Perelli.pdf, 2009. P.37-38.

¹⁰⁰BIEGER (T & LAESSER (C). *Future Living: Conditions and Mobility: Travel Behaviour of Alpine Tourists.* Leisure Future Congress Innsbruck, April 2002.

consideration and participation of the client. Hence, innovation leads to higher market shares, a higher efficiency and easier realisation of aims regarding turnover or profit (Hübner, 2002)¹⁰¹.

(a) Issues in Global Tourism

International tourism demand held up well in 2010, despite persistent economic uncertainty in some major markets, the natural disasters suffered in some countries, political and social unrest in others, the serious disruption of air travel following a volcanic eruption in Iceland last April and the problematic weather conditions in parts of Europe and the USA in December (UNWTO World Tourism Highlight, 2010)¹⁰².

International tourism recovered strongly in 2010 according to the Advance Release of the UNWTO World Tourism Barometer. International tourist arrivals were up by almost 7% to 935 million, following the 4% decline in 2009 – the year hardest hit by the global economic crisis. The vast majority of destinations worldwide posted positive figures, sufficient to offset recent losses or bring them close to this target. However, recovery came at different speeds and was primarily driven by emerging economies.

Promoted by improved economic conditions worldwide, international tourism has recovered faster than expected from the impacts of the global financial crisis and economic recession of late 2008 and 2009. International tourist arrivals were up by 6.7% compared to 2009, with positive growth reported in all world regions. Worldwide, the number of international tourist arrivals reached 935 million, up 58 million from 2009 and 22 million more than the pre-crisis peak level of 2008 (913 million).

UNWTO Tourism Highlight for 2010 (see table 8 in appendices) noted about international tourism arrivals that the global economy recessed because of the uncertainty around an influenza pandemic and thus turned 2009 into one of the toughest years for the tourism sector. International tourist arrivals for business, leisure and other purposes added up to 880 million in 2009, corresponding to a worldwide decline of 4.2%. Growth returned in the last quarter of 2009, after 14 months of negative results. The 2% upswing registered in the last quarter of 2009 contrasts with the declines of 10%, 7% and 2% felt in the first three

¹⁰¹HUBNER, (H). *Integratives Innovationsmanagement. Nachhaltigkeit als Herausforderung für ganzheitliche Erneuerungsprozesse*, Erich Schmidt, Berlin, 2002.

¹⁰²UNWTO *Tourism Highlights*, 2010 Edition

quarters respectively. Asia and the Pacific and the Middle East led the recovery with growth already turning positive in both regions in the second half of 2009.

Except for Africa, which rushed the global trend with a 3% growth, all world regions were negative in 2009. Europe (-6%), the Middle East (-5%) and the Americas (-5%) were the hardest hit regions. Asia and the Pacific achieved the most impressive upturn, from a 7% decline between January and June to a 4% growth in the second half of the year, closing the year at -2%¹⁰³.

Furthermore, as an internationally traded service, inbound tourism has become part of the major trade categories. The overall export income generated by inbound tourism, including passengers transport, exceeded US\$ 1 trillion in 2009, or close to US\$ 3 billion a day. Tourism exports account for as much as 30% of the world's exports of commercial services and 6% of overall exports of goods and services. Globally, as an export category, tourism ranks fourth after fuels, chemicals and automotive products. *For many developing countries it is one of the main sources for foreign exchange income and the number one export category, creating much needed employment and opportunities for development.*

The contribution of tourism to economic activity worldwide is estimated at about 5%. Tourism's contribution to employment tends to be slightly higher relatively and is estimated around 6-7% of the overall number of jobs worldwide (direct and indirect).

The most comprehensive way to measure the economic importance of both inbound and domestic tourism in national economies is through the 2008 *Tourism Satellite Account (TSA) Recommended Methodological Framework*, approved by the UN Statistics Commission. Though many countries have taken steps to implement the TSA, relatively few have full, comparable results available.

The knowledge and experience gained through the TSA exercise has certainly contributed to a much better understanding of the role of tourism in economies worldwide and allows for an attempted approximation of key indicators. Based on the currently still fragmented information from countries with available data, tourism's contribution to worldwide gross domestic product (GDP) is estimated at about 5%. For advanced, diversified economies, the contribution of tourism to GDP ranges from approximately 2% for countries where tourism is a comparatively small sector, to over 10% for countries where tourism is an

¹⁰³UNWTO *Tourism Highlights*, 2010 Edition and WTTC, 2010

important pillar of the economy. For small islands and developing countries, or specific regional and local destinations where tourism is a key economic sector, the importance of tourism tends to be even higher.

(b) International Tourism Receipts

Growth in international tourism receipts continued increase during 2010¹⁰⁴, as is the trend during periods of recovery. Among the top outbound tourism markets in terms of expenditure abroad, emerging economies continued to drive growth: China (+17%), the Russian Federation (+26%), Saudi Arabia (+28%) and Brazil (+52%). Of the traditional source markets, Australia (+9%), Canada (+8%), Japan (+7%) and France (+4%) rebounded, while more modest growth at 2% came from the USA, Germany and Italy. On the opposite side of the spectrum, expenditure abroad from the UK was still down by 4% in 2010.

Referring to the purpose of visit and mode of transport, in 2009, travel for leisure, recreation and holidays accounted for just over half of all international tourist arrivals (51% or 446 million arrivals). Some 15% of international tourists reported travelling for business and professional purposes and another 27% travelled for specific purposes, such as visiting friends and relatives (VFR), religious reasons and pilgrimages, health treatment, etc. The purpose of visit for the remaining 7% of arrivals was not specified. Slightly over half of travellers arrived at their destination by air transport (53%) in 2009, while the remainder travelled over the surface (47%) – whether by road (39%), rail (3%) or over water (5%). Over time, the trend has been for air transport to grow at a faster pace than surface transport, so the share of air transport is gradually increasing.

International tourism receipts reached US\$ 852 billion (611 billion euros) in 2009 (see table 9 in appendices), down from US\$ 941 billion (euro 640 billion) in the previous year. In absolute terms, international tourism receipts decreased by US\$ 89 billion, but only by euro 29 billion due to the appreciation of the US dollar against several world currencies and, in particular the euro (from its historic low against the euro in 2008, the US dollar recovered some 5% in 2009). In real terms, using local currencies at constant prices in order to adjust for exchange rate fluctuations and inflation, international tourism receipts has decreased by 5.7% in 2009. This was the first year of decline since 2003, when

¹⁰⁴UNWTO *Tourism Highlights*, 2010 Edition and WTTC, 2010

international tourism was hit by the Iraq war and the outbreak of SARS, decreasing then by 1.3% in real terms.

As in most years, the difference in the trend in receipts and arrivals was fairly narrow in 2009, showing that the slowdown in receipts is mostly linked to the dip in arrivals rather than to reduced expenditure. All regions suffered a drop in receipts in real terms, albeit with varying rates of decline. The brunt of the losses were born by the Americas (-10%), and Europe (-7%). Asia and the Pacific (-1%), the Middle East (-1%) and Africa (-4%) did comparatively better than the world average.

(c) International Tourism by Region

All regions posted growth in international tourist arrivals, emerging economies remain the main drivers of this recovery. This multi-speed recovery, lower in advanced economies (+5%), faster in emerging ones (+8%), is a reflection of the broader global economic situation and is set to dominate 2011 and the foreseeable future. *The recovery in international tourism is increased, especially for those developing countries that rely on the sector for much-needed revenue and jobs.* This growth is over the coming years amid a still uncertain global economic environment” (International Tourism 2010: Multi-Speed Recovery, Madrid, Spain 17 January 2011)¹⁰⁵.

In Europe (+3% to 471 million) recovery was slower than in other regions due to the air traffic disruption caused by the eruption of the volcano and the economic uncertainty affecting the euro zone. However, the sector gained momentum from the second half of the year and some individual countries performed well above the regional average, but this was not sufficient to bring overall results above the losses of 2009. The region, which accounted for 52% of international tourist arrivals and 48% of international tourism receipts in 2009 (see table 10 in appendices), saw arrivals decrease by 6% to 460 million, while receipts declined 7% in real terms to US\$ 413 bn (euro 296 billion). Destinations in Central and Eastern Europe were particularly injured, while results in Western, Southern and Mediterranean Europe were relatively better. Many countries in Central and Eastern Europe have been more severely affected by the economic recession and are finding the return to growth more difficult.

¹⁰⁵UNWTO, *International Tourism 2010: Multi-Speed Recovery*, UNWTO: Madrid, Spain 17 January 2011.

In the case of Asia and the Pacific, the decline followed a series of five very strong years. By sub region, only Oceania (+5%) and North-East Asia (+1%) showed positive growth in real terms. Despite negative results, South Asia (0%), South America (-1%) and Northern Europe (-3%) performed above the world average (see table 11 in appendices).

The Americas (+8% to 151 million) rebounded from the decline in 2009 brought on by the economic hardship suffered in North America and the impact of the influenza outbreak. The return to growth in the US economy has helped improve the region's results as a whole, as did the increasing regional integration in Central and South America and the vitality of Latin American economies. Growth was strongest in South America (+10%) (see table 12 in appendices).

Africa remained the well performance among world regions throughout 2009 as show in table 13 in appendices, achieving positive growth in international tourist arrivals of 3%, to 46 million (5% of world total). International tourism receipts, however, are estimated to have decreased by 4% in real terms to US\$ 29 billion (3% of world total). A number of countries in Sub-Saharan Africa far outperformed the world average in 2009. Kenya sustained its recovery, achieving an impressive double digit increase (visitor arrivals +24%, tourist arrivals not yet available). Angola recorded 24% growth, Swaziland 20% and Ghana 15%. South Africa continued its positive trend benefiting from the build-up to the hosting of the 2010 FIFA World Cup and international arrivals increased by 4%. In North Africa, Morocco maintained momentum (+6%) and was one of the top performers of 2009, supported by state-of-the-art product development and active and imaginative promotion.

The Middle East has been one of the fastest growing regions of the past few years. In 2009, however, international tourist arrivals fell by an estimated 5% to 53 million (6% of world total), while international tourism receipts decreased by 1% in real terms to US\$ 41 billion (5% of world total). The regional average was brought down by its two largest destinations Saudi Arabia (-26%) and Egypt (-3%) that were unable to sustain the bumper growth of previous years. On the other hand, most other destinations still showed positive results, with Lebanon (+40%), Qatar (+18%) and Syria (+12%) even reporting double-digit increases (see table 14 in appendices).

5.1.2 Tourism Flow and Trends Analysis

Visitor export is a key component of the direct contribution of Travel & Tourism. The European Union is expected to attract 373,495,000 international tourist (overnight visitor) arrivals in 2011, generating US\$ 400bn in visitor exports (foreign visitor spending, including spending on transportation). On the other hand, North Africa is expected to receive US\$ 25bn in 2011. This means that Travel & Tourism's share of total European regional investment will rise from 4.0% in 2011 and expect to increase to 4.2% in 2021.

Visitor Exports	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
EU27												
US\$ bn	233.8	228.5	241.8	280.4	327.1	346.1	377.9	432	462.26	393.9	394.63	402.23
North Africa												
US\$ bn	9.543	9.778	9.93	11.32	14.6	16.85	19.5	23.539	26.903	24.872	26.065	25.431

Table 15: Visitor Exports (EU and North Africa) from 2000-2011
Source: WTTC, 2011

UNWTO's Tourism 2020 Vision forecasts that international arrivals are expected to reach nearly 1.6 billion by the year 2020. Of these worldwide arrivals in 2020, 1.2 billion will be intraregional and 0.4 billion will be long-haul travellers. East Asia and the Pacific, South Asia, the Middle East and Africa are forecast to grow at over 5% per year, compared to the world average of 4.1%. More mature regions such as Europe and the Americas are anticipated to show lower-than-average growth rates. Europe will maintain the highest share of world arrivals, although this share will decline from 60% in 1995 to 46% in 2020. The total tourist arrivals by region shows that, by 2020, the top three receiving regions will be Europe (717 million tourists), East Asia (397 million) and the Americas (282 million), followed by Africa, the Middle East and South Asia.

Concerning European countries, and based on the available data of tourism statistics (Eurostat, 2010)¹⁰⁶, a small increase of 0.5 % was recorded for tourism expenditure by EU residents. While the number of domestic holiday trips declined in 2010, expenditure during

¹⁰⁶EUROPEAN UNION, EUROSTAT, *Tourism Statistics, 2010*, cited in http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Tourism_statistic

this type of trip grew over the same period. This resulted in an increase of 1.2 % in average spending per trip.

On trips to destinations outside their own country, residents of these 16 Member States spent less per trip (-0.9 %) in 2010 compared to 2009. In particular, long trips abroad fell by 0.8 %. Table 3 shows that this segment recorded the biggest drop in average length of the trip. Since the reduced total expenditure was distributed over relatively fewer nights, the average expenditure per night away increased by 1.5 %. For the other types of trips, the expenditure per night also increased in 2010. In most cases this will be due to fixed costs, such as transport to the destination, which were divided over fewer nights.

	Tourist Expenditure By EU residents (% change)	Average tourist expenditure per trip (in euro)			Average tourist expenditure per night (in euro)		
		2009	2010	% change	2009	2010	% change
All holiday trips	0.5 %	355	355	-0.1 %	62	63	1.2 %
Domestic holiday trips	1.9 %	198	200	1.2 %	45	45	1.3 %
Outbound holiday trips	-0.3 %	716	710	-0.9 %	81	83	1.7 %
Long holiday trips (total)	0.0 %	578	578	-0.1 %	59	60	1.0 %
Long domestic holiday trips	1.8 %	335	341	1.8 %	38	38	1.3 %
Long outbound holiday trips	-0.8 %	838	831	-0.8 %	78	79	1.5 %
Short Long holiday trips (total)	2.7 %	143	145	1.6 %	73	75	1.6 %
Short domestic holiday trips	2.0 %	120	121	1.0 %	63	64	1.3 %
Short outbound holiday trips	4.9 %	292	299	2.4 %	134	134	0.6 %

Table 16: Tourist Expenditure by EU Residents

By comparing the economic growth of world tourism between 2001 and 2011, we can notice that, in percentage, the contribution to the GDP of the real growth in travel and tourism increased dramatically from 0.2 to 4.4 in ten years (see table 17 in appendices). This growth had a positive effect on Employment even though there was an initial drop of -3% in 2001, it went up to 3.8% in 2011. Expenditure in leisure travel and tourism slightly climbed up between 2001 and 2011, which indicates that the world's tourism economy circulates well. Indeed, 2011 witnessed the largest growth in tourism expenditure reaching US\$ 2962.6 bn. There was a significant fluctuation in worldwide capital investment over the period, since investment growth rose from 2001 to 2008 (up to US\$710.066 bn) and dropped down to US\$ 652.43 bn in 2011.

According to WTO's forecast in 2011, following a year of global recovery in 2010, growth is expected to continue for the tourism sector in 2011 but at a slower pace. International tourist arrival is to grow at about 4% to 5% in 2011. A rate slightly increased above the long-term average. Persistent high unemployment remains a major concern, with the gradual recovery in employment expected for 2011 still too weak to compensate for the jobs lost during the economic crisis. The recent tendency towards introducing and increasing taxation on travel as a means of balancing public accounts represents a further challenge to the sector. While fully understanding the need for fiscal consolidation, UNWTO will continue to alert governments to the fact that these taxes seriously affect tourism's proven capacity to stimulate job creation and economic growth, impacting negatively on their own economies and on the development possibilities of emerging economies.

When ranked according to *the two key tourism indicators*, international tourist arrivals and international tourism receipts, it is interesting to note that eight of the top ten destinations, they show marked differences in terms of the type of tourists they attract, their average length of stay, as well as their spending per trip and per night.

In spite of the decreases suffered by most destinations in 2009, there have been only slight changes in the ranking of the top ten destinations by international tourist arrivals, while the ranking in terms of international tourism receipts remains unchanged compared to the 2008 ranking. The first three places in both arrivals and receipts are still occupied by France, Spain and the USA, in a different order. France (74 million tourists) continues to lead the ranking of the world's major tourism destinations in terms of arrivals, and ranks third in

receipts. The USA ranks first in receipts with US\$ 94 billion and second in arrivals. Spain maintains its position as the second biggest earner worldwide and the first in Europe, and ranks third in arrivals.

The 2010 International tourism expenditure figures show the top 10 ranking countries and brings up one remarkable change in 2009 (see table 18 in appendices). The first three places were held by Germany (US\$ 81 bn), the USA (US\$ 73 bn) and the UK (US\$ 50 bn). China has shown by far the fastest growth with regard to expenditure on international tourism in the last decade, ranking only seventh in 2005. In 2009 expenditure still increased by a whopping 21% (reported in current US\$ terms). Of the other nine top expenditures only one recorded positive growth. The Netherlands, occupying tenth position, increased spending by a very modest 0.4% (in current Euro terms).

Examples of the Influences of Technology and Communications: the Case of the United States

As mentioned earlier in this chapter, social media and technology will dramatically change the face of the tourism industry and have influences to tourist behaviour in the future. Holiday ideas from friends worldwide, interactive bookings and mobile travel guides at the destination will become the norm in the near future (World Travel Monitor Forum meeting in Pisa)¹⁰⁷.

Tourists are using social media more and more, with an example in the USA where about 52% of the 152 million adult leisure travellers – or some 79 million people - already use social media. They represent an attractive customer segment generating \$102.9 billion for the domestic US tourism sector compared to \$69.5 billion from non-social media users. Indeed, their greater impact is driven by a higher average number of trips (5.4 per year vs 4.2), although they spend less per trip on average. A high 41% of US online leisure travellers have become ‘travel social fans’ (TSFs), signing up as friends, fans or followers of travel suppliers on social networking sites (US-based Mandala Research, 2010/2011)¹⁰⁸.

¹⁰⁷World Travel Monitor Forum meeting in Pisa cited in ITB World Travel Trends 2010/2011

¹⁰⁸US-based Mandala Research, 2010/2011

Interestingly, US social media users tend to be active on Facebook, read other social sites, use the internet intensively for travel information, and check out hotels on Trip Advisor¹⁰⁹ and use online travel retailers such as Expedia¹¹⁰. However, only a low 20% rely on social sites for leisure travel information as they tend to trust websites more than social networks. In the same way as non-social media users, they still rely heavily on traditional sources of trip information, such as friends and family (word of mouth), brochures and diverse media.

From this point of view, the figures above are significant for travel suppliers. They should be prepared and concern themselves more with social marketing as social media is still at an early stage. At the same time, they should inspire trust to their users, segment the social media target audience into different types, select their targets and then position their product with a distinctive image. According to this study, it is established that the travel industry invested in the cheap marketing channel which are social media, but at the present there are few effective ways of measuring the success of this activity.

5. 2 Technology Factors Raise in International Supply

The tourism industry, notably such businesses as transportation, airlines, hotel chains, tour operators and/or car rental agencies, are highly concentrated and act as global players in the industry. According to the Top Ten Hotel Chain Groups in the world in 2011¹¹¹, the WYNDHAM and IHG groups became the first and second ranks of the top ten by increasing the number of rooms by 2.5% and 0.5% respectively (see table 19 in appendices). With markets turning mature, heightened technological change in the IT field and the slowing down of demand, in many parts of the industry rivalry has turned into ruinous competition. Globalisation and deregulation have further heightened competition, similar to other fields of economic activity these market conditions enhance process innovation (networking, reservation and yield management systems, etc.) as opposed to

¹⁰⁹11 Trip Advisor.com is a travel website that assists customers in gathering travel information, posting reviews and opinions of travel-related content and engaging in interactive travel forums.

¹¹⁰Expedia is an Internet-based travel website and uses multiple global distribution systems like Amadeus reservation systems for flights and for hotels.

¹¹¹BENTAIN (D)., “*Chaines internationale : Toujours, et plus encore. Les dix premieres groupes hoteliers du monde en 2011*”. Cited in Voyage d’Affair N.129, octobre, 2011.

product innovation which can be easily imitated by rival competitors (Weiermair *et al.*, 2002)¹¹².

Referring to International Tourism Receipts in 2009, visitor expenditure on accommodation, food and drink, local transport, entertainment, shopping, is an important pillar of the economies of many destinations, creating much needed employment and opportunities for development. For more than 80 countries, receipts from international tourism were over US\$ 1 billion in 2009. For destination countries, receipts from international tourism count as exports and cover transactions generated by same-day as well as overnight visitors. However, these do not include receipts from international passenger transport contracted from companies outside the travellers' countries of residence, which are reported in a separate category (International Passenger Transport).

5.2.1 Tourists' Preferences in International Supply

According to the existing literature (Crouch and Louvière, 2001; Brau and Cao, 2005)¹¹³, a foreign visitor might obtain satisfaction from several sources, for example:

- The quality and the quantity of services supplied by private tourist operators (accommodation, restaurants, leisure facilities).
- The quality and the quantity of public goods provided by local authorities (public transport, information, safety).
- The quality and the quantity of the environmental (amenities, landscapes, beaches, mountains, parks, climate), cultural (traditional customs and events, typical food, historic buildings, museums), and social (people's behavior, general atmosphere, fascinating attitudes) resources.
- The degree of availability of public goods and cultural and environmental amenities, which is highly correlated and negatively influenced by the collect number of visitors.

¹¹²WEIERMAIR (K) & PETERS (M)., "*Innovation and Innovation behaviour in hospitality and tourism: Problems and Prospects*", 2002. In "Tourism in Asia: Development, Marketing and Sustainability", Fifth Biennial Conference, Conference proceedings, Hong Kong, pp. 600-612.

¹¹³CROUCH & LOUVRIERE, 2001 AND BRAU & CAO, 2005 cited in RINALDO (B)., LANSA (A)., USAI (S)., *Tourism and sustainable economic development: Macroeconomic models and empirical methods*. The Fondazione Eni Enrico Mattei (FEEM) Series on Economics, The Environment and Sustainable Development, Edward Elgar Publishing Limited, UK, 2008.

5.2.2 New Trends in Hotel Supply

It was noted in ITB World Travel Trends Report 2010-2011¹¹⁴ that within 10 years we could be checking into hotels staffed by robots, using automated ‘*smart hotels/ smart rooms*’ and socialising interactively with other guests and complete stranger. ‘Smart hotels’ refers to one of six different possible types of ‘Future Hotels’, others could include basic modular hotels for budget travellers, middle-class hotels used as branded showrooms, ‘avant-garde’ hotels for trendy guests, well-being resorts for health focused guests, and community hotels either for travellers with a specific cultural background or socially-oriented travellers. All of them are sustainable hotels as consumers become more and more environmentally conscious.

(a) Smart Hotels

In the future, hotel guests could create different public profiles of themselves that other guests could access, it would be called “*Hotel families in social networks*”. Online communities of like-minded people with similar interests could be set up, and hotel experiences and recommendations exchanged. At the same time, hotel operators could use the profiles to fashion products and services in line with customer wishes, and offer various individualised services on demand. Members of this new ‘hotel family’ could then meet up in the hotel and undertake joint activities depending on their interests. After the stay, guests could communicate their product feedback to their social community.

Another trend will be “*Automated rooms*” within future ‘smart hotels’: guests could check in and enter their room using a pin code previously transmitted to their smart phone or even via biometric identification. ‘Smart rooms’ could be designed with relaxing curves rather than straight lines as walls integrate various functions and technologies. The room would contain a range of interactive features such as intelligent ‘energy beds’, wall displays that convert into giant TV screens, or TV screens as interactive interfaces or workspaces. The environment could even be individualised for each guest or situation using his or her profile.

Good example cases on the newest high-tech and most vanguard hotels are the two Andaz hotels in New York, on Wall Street and on 5th Avenue. Thanks to technology, guests skip the front-desk all together and use mobile tablets to check in with the hotel's floating

¹¹⁴www.itb-berlin.com/library

'hosts'¹¹⁵. Another case is the Royal Mansour in Marrakech, Morocco. The property was created completely by Moroccan artisans and craftsmen trained in the traditional arts of carving, silk weaving, and mosaics, but the hotel added cutting-edge technology throughout. For example, every guest room has a touch screen wall that enables guests to control lighting and temperature levels and in case they tire of the personal butler service.

Technological change was also identified by Professor Haiyan Song, chair professor of tourism at the Hong Kong Polytechnic University (mentioned in 18th World Travel Monitor Forum from IPK International in Pisa). “Robots will manage, serve and guide our travel with high quality and consistent service. For example, hotel receptions will use robots in the future.” Technology will be one of the key topics shaping the hotel industry over the next five years.

(b) Design and Innovation Hotels

Today, hotels are making a more concerted effort to upgrade their guest rooms and common areas with the newest technology that keeps guests connected, educated, and often times inspired, during their stay. While many hotels bring in smart technology such as ipads to keep their guests entertained, other hotels are getting interesting with some unique high-tech initiatives.

The Amangiri hotel, Southern Utah, USA is a good example case of deluxe comfort hotel concerning its architectural design matching with natural concept (desert)¹¹⁶. The resort is enclosed into a protected valley with sweeping views over colourful, stratified rock. Architecturally, the resort has been designed to blend into the landscape with natural hues, materials and textures are features of the design. The structures are commanding and in proportion with the scale of the natural surroundings, yet provide an intimate setting from which to view and appreciate the landscape. This design is supported by high technology to create a new product of accommodation.

The Endemico Hotel in Mexico is one of the hi-tech galaxy deluxe cottages¹¹⁷. The cottage comprises 20 rooms with a 360° view. It was inspired by the concept of deluxe camping: every cottage is made out of wood, and provides 5 star comfort. The heat and the desert

¹¹⁵http://www.gadling.com/2010/08/03/hotels-keeping-up-the-pace-with-new-technology/?icid=sphere_blogsmith_inpage_gadling

¹¹⁶ARCHITECTURAL DIGEST., *Les plus beaux hotels 2011*. No.100, Mai, 2011.

¹¹⁷ARCHITECTURAL DIGEST., *Les 12 tendances de 2012*. No.105, Décembre, 2011.

were the main difficulties and challenges to be overcome on this site, therefore technological support made it possible to build this unique ambience.

Another example of innovation hotel is the case of the 'Intercontinental' group which is known for its ambition to promote, share and apply a set of resolutions supporting and encouraging sustainable development in hotel businesses. The group has set up an interactive website, offering a virtual view representing the application of these resolutions, in a virtual hotel. Most of the resolutions emphasised on the website, illustrate real and concrete examples of the application of technology transfer¹¹⁸. Therefore, the concept of 'Innovation hotel' set forth by the Intercontinental Group is a perfect way to bring together the best ideas which can help the hotel industry to set up sustainable renovation in the design, development, and management of each establishment.

(c) Environmental technologies

Tourists are becoming increasingly sophisticated in their choice of tourism destination (Poon, 1993; Swarbrooke and Horner, 1999). In this concern, a major factor in the choice of tourists could be the environmental quality of their favourite destination (Yaw, 2005)¹¹⁹. Bhat (1999) argues that "customers are demanding environmentally friendly products", but as indicated above, other researchers found that this is not the case. Planners of tourism destinations also understand that the sustainability of their product necessitates consideration of issues of environmental protection and conservation. As Yaw mentioned, the use of cleaner technologies can contribute to the sustainability of the tourism system, and Blommestein (1995) goes further concluding that the global competition will force destinations to become more environmentally conscious or find themselves marginalised in the global tourism market.

¹¹⁸ACTING FOR LIFE., *Handbook for technology transfer in the tourism sector in developing country and least developed countries (LDCs)*. Tourism Ethics and Development Program, Tourism Acting for Life, France, 2009.

¹¹⁹Yaw (F). *Cleaner technologies for sustainable tourism*. Caribbean case studies: Journal of Cleaver Production, 2005, Vol. 13.

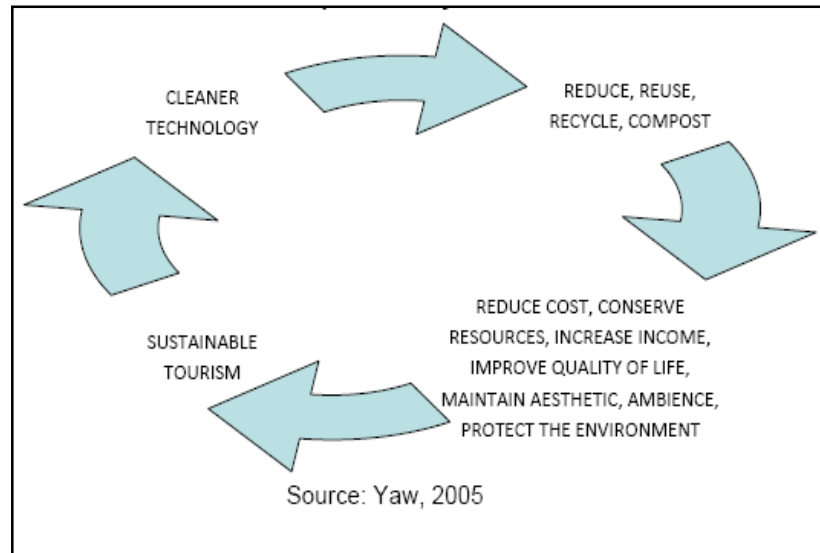


Figure 16: Contribution of cleaner technologies to the production process cycle (Yaw, 2005)

Mankind’s capability to extract useful services from the ecosystem can be extended through using what are called “cleaner technologies”, namely technologies that allow production with little or no waste through total recycling of products (Yaw, 2005). According to the UNEP (1998) and Asolekar (1999), cleaner technologies can contribute to the closure of the production-process cycle. Yaw (2005) gives examples of such cleaner technologies that include tertiary treated sewage use for irrigation, metal, glass and plastic recycling, composting organic solid waste, use of renewable energy sources, smart building design to reduce energy demand for lighting and cooling systems.

As Clayton et al. (1999) suggest the use of cleaner technologies leads to a minimisation of the volumes and hazards of gaseous, liquid and solid waste, a minimisation of the risk of accidents involving chemicals and processes, a minimisation of the consumption of raw materials, water and energy and use of the substitute chemicals and processes less hazardous to human and ecological health.

According to studies conducted by Yaw (2005), Blanco et al. (2009) and Erkus-Ozturk & Eraydin (2009)¹²⁰, tourism firms, by undertaking cleaner technologies and complying with environmental friendly policies can enjoy the following benefits: attract more and “greener” customers, reduce production, fixed costs, etc., comply with international

¹²⁰Erkus-Ozturk (H) et Eraydin (A)., *Environmental governance for sustainable tourism development: Collaborative networks and organization building in the Antalya tourism region*. Tourism Management, Article in Press, 2009.

environmental protocols and national environmental policies, maintain environmental integrity, reduce energy consumption, and reduce material usage.

The best practices identified by empirical case studies which consist in using cleaner technologies in tourism could be summarised into three principles: energy saving, by the use of energy saving lighting devices (bulbs etc), use of low energy consuming air-conditioning / cooling or heating devices, and use of solar and wind power within the establishments (for water heating or electrical power production). They can also include material saving and reduction of waste in several ways such as composting solid organic waste, treating and reusing waste water, collecting rainwater in tanks, recycling glass, paper, metal and plastic containers, and using environmentally friendly cleaning products.

5.2.3 Technology Factors in Air Transport: Online Passenger Service

The emergence of personal mobile technology is a new phenomenon in passenger services. In today's environment of instant information, consumers expect to be constantly informed by connecting to a variety of sources whilst maintaining contact with their social networks. In order to keep pace with the expectations of the customer, airlines and airports must take concrete steps to take advantage of these emerging devices and technologies.

As personal technology continues to evolve, they must also keep pace with customer expectations and utilise these new platforms to improve loyalty and travel efficiency. At the heart of this enriched passenger experience is knowledge of the customer. To effectively deliver personalised services based on that knowledge, sharing information internally and pro-actively communicating to the customer are a must. This requires a re-thinking of the airline and airport relationship with the goal to provide passenger insight to all members of the value chain.

To fulfil the vision of the airport of tomorrow, all stakeholders including the airline, the airport, and the passenger, must be interconnected with electronic communication driving greater efficiency and customer satisfaction¹²¹. A new age of passenger self-service is being driven by the adoption of smart phones and tablets. The always connected travellers will

¹²¹ AMADEUS & TRAVEL TECH. *Navigating the Airport of Tomorrow*, 2011, pp 4-5.

expect to receive information and promotions based on their status, location, personal needs and specific situation.

Airlines will utilise this new self-service age by redeveloping airport resources to areas of specific operational challenges. Airlines will embrace new interconnected technology and share critical passenger information with the airport. Airports which need to drive greater profitability and enhance the user experience will adopt merchandising strategies promoting airport shops, thus transforming the airport into a modern shopping mall experience. Technology operations and the use of tablets to enable roaming agents will have a dramatic impact on airport operations. At the heart of this technological revolution is the more informed passenger. The always connected passenger will demand information and services delivered on their preferred personal computing device at all points of their journey. All sectors of the industry will share a common vision of a more automated, efficient airport experience.

5.3 Tourism Investment and R&D: The Competitiveness

The latest update of annual transport infrastructure investment and maintenance data collected by the International Transport Forum at the OECD¹²² shows that GDP share of investment in inland transport infrastructure has remained almost constant in Western Europe (0.8%) and North America (0.6%) over the past decade. Record investment levels were reached in Central and Eastern European countries, with a 7.6% growth in 2008/09, amounting to 2.0% of GDP (2009). The balance between road maintenance and investment has remained relatively constant over time in many regions, with maintenance making up 30% of total road expenditure on average, see table 20 in appendices: Airport Infrastructure Gross Investment.

¹²²*International Transport Forum, 2010. Cited in www.internationaltransportforum.org/statistics/investment/*

5.3.1 Technology and Competitiveness

Competitiveness is defined as *the set of institutions, policies, and factors that determine the level of productivity of a country*. The level of productivity, in turn, sets the level of prosperity that can be earned by an economy. The productivity level also determines the rates of return obtained by investments in an economy, which in turn are the fundamental drivers of its growth rates. In other words, a more competitive economy is one that is likely to grow faster over time. The concept of competitiveness thus involves static and dynamic components. It is also the central determinant for return investments which is one key factor explaining the economic growth. There are many determinants driving productivity and competitiveness. Understanding the factors behind this process has occupied and described by the theories ranging from Adam Smith's focus on specialisation and the division of labour to neoclassical theories¹²³. Economists emphasise on investment in physical capital and infrastructure and more recently on other mechanisms such as education and training, technological progress, macroeconomic stability, good governance, firms.

According to the twelve pillars of the World Economic Forum of 2011¹²⁴, ***technology, innovation, education and training*** are considered as four of those pillars since they are core determining measures in potential economic growth. Tourism ***technology*** is increasingly essential for firms to compete and prosper. The technological readiness core measures the agility with which an economy adopts existing technologies to enhance the productivity of its industries, with specific emphasis on its capacity to fully leverage information and communication technologies (ICT) in daily tourism activities and production processes for increased efficiency and competitiveness. ICT has evolved into the "general purpose technology" of our time, given the critical spillovers to the other economic sectors and their role as industry wide enabling infrastructure.

Therefore ICT access and usage are key enablers for countries' overall technological readiness. Whether the tourism technology used has or has not been developed within national borders is irrelevant for its ability to enhance productivity. The central point is that the tourism firms operating in the country need to have access to advanced products and blueprints and the ability to use them. Among the main sources of foreign technology, FDI

¹²³WORLD ECONOMIC FORUM 2011. *The Global Competitiveness Report 2011-2012*. P.529

¹²⁴WORLD ECONOMIC FORUM 2011. *The Global Competitiveness Report 2011-2012*. P.6-8

often plays a key role. It is important to note that the level of technology available to tourism and hospitality firms in a country needs to be distinguished from the country's ability to innovate and expand the frontiers of knowledge.

Secondly, another significant pillar of competitiveness is technological innovation. Although substantial gains can be obtained by improving institutions, building infrastructure, reducing macroeconomic instability, or improving human capital, all these factors eventually seem to run into diminishing returns. The same is true for the efficiency of the labour, financial, and goods markets. In the long run, standards of living can be enhanced only by technological innovation. Innovation is particularly important for economies as they approach the frontiers of knowledge and the possibility of integrating and adapting exogenous technologies tends to disappear. Although less-advanced countries can still improve their productivity by adopting existing technologies or making incremental improvements in other areas, for those that have reached the innovation stage of development, this is no longer sufficient for increasing productivity.

Firms in these countries must design and develop cutting-edge products and processes to maintain a competitive edge. This progression requires an environment that is conducive to innovative activity, supported by both the public and the private sectors. *This means that investment in research and development (R&D) should be sufficient, especially in the private sector of tourism, that high-quality scientific research institutions should be established, and that extensive collaboration in research between universities and industry should be implemented, along with an efficient protection of intellectual property.* In the light of the recent sluggish recovery and rising fiscal pressure faced by advanced economies, it is important that public and private sectors resist temptations to cut back on the R&D spending that will be so critical for sustainable growth in the future.

Lastly, higher **education** and **training** is crucial for economies that want to move up the value chain beyond simple production processes and products. In particular, today's globalising economy requires countries to nurture pools of well-educated workers who are able to adapt rapidly to their changing environment and the evolving needs of the production system. This pillar measures secondary and tertiary enrolment rates as well as the quality of education as evaluated by the business community. The extent of staff training is also taken into consideration because of the importance of vocational and

continuous on-the-job training which is neglected in many economies for ensuring a constant upgrading of workers' skills.

5.3.2 Tourism Investment

Tourism investment consists in innovating and improving technology, products, marketing, and developing infrastructure sectors. As mentioned in Chapter 1 while identifying technology and innovation, technology development includes the creation of new products, new production processes, new raw materials to meet customer satisfaction. It also embraces the importation of knowhow from developed country. In terms of infrastructure development, it aims at increasing the accessibility to tourist facilities and modes of transportation (airport, train, and road). However, investment in tourism is very complex and takes time to give out its results, especially in the domain of infrastructure as it needs high amounts of investment.

Travel & Tourism investment was estimated at about US\$652.4bn, or 4.5% of total investments in 2011. It should rise by 5.4% pa to reach US\$1,487.9bn, or 4.6% of total investments in 2021¹²⁵.

Tourism Investment by Region	2011 (US\$ bn)
North America	155.74
North East Asia	149.75
European Union	118.96
Latin America	46.31
South East Asia	45.45
South Asia	29.67
Middle East	27.32
Other Europe	26.82
Oceania	22.67
Sub Sahara Africa	13.15
North Africa	10.89
Caribbean	5.69

Table 21: Tourism Investment by Region

¹²⁵WORLD ECONOMIC FORUM 2011. *The Global Competitiveness Report 2011-2012*. P.6-8

It can be noted that developed countries such as North America, North East Asia (Japan, Korea), and EU countries have high ranges in tourism investment while Sub Sahara Africa, North Africa, and Caribbean have less potential in investment.

An example case is the United States, where although overall government spending rose between 2007 and 2009, the share spent on education declined from 16.8 to 15.8 percent of the total. Given the importance of public investment in the competitiveness- enhancing areas such as education or innovation for future competitiveness- policy makers must measure very carefully the effects of reducing such investments, as this may endanger future growth and prosperity. This would have the unfortunate effect of converting short-term financial difficulties into longer-term competitiveness weaknesses.

Policy makers should therefore focus on measures to enhance competitiveness that would strengthen their countries' growth potential and thus improve the budgetary situation. In peripheral European economies that have accumulated debt over the past years while their competitiveness has not improved, competitiveness enhancing reforms would support economic growth and thus create a virtuous cycle that could make high debt burdens more sustainable.

5.3.3 Case of Thailand

Since Thailand opened Suvarnaphum Airport in the end of 2007, the number of tourist arrivals has gradually increased each year (according to international tourist arrivals to Suvarnaphum Airport compared to 2010-2011)¹²⁶, the number of tourist has thus reached up to 475,908 tourists in 2011 in the East Asia region. And in 2010 the Suvarnaphum Airport has received 232,253 tourists in the same region. In 2011, 206,174 tourists from the European Region have travelled to Thailand and 162,412 tourists in 2010 (see table 22: in appendices: International Tourist Arrival to Thailand by Nationality at Suvarnaphum Airport, 2011).

Because of the political crisis which lasted in the country from 2009 to 2010, the number of tourists fell down over a short period a time but recovered immediately as the involved stakeholders managed the situation in the right manner and benefited from proper facilities.

¹²⁶MINISTRY OF TOURISM AND SPORTS OF THAILAND, *International tourist arrivals by nationality at Suvarnaphum Airport*, 2011.

Statistics show another interesting point which is that the number of intra-regional tourists (East Asia- China, Japan, Korea, and Taiwan) has increased in Thailand. The reason why intra-regional tourism is so strong is because of the existing facilities, the well-known products, low budget, etc. We can also mention that Thailand represents an example of application of Linder’s Theory of Demand which is the *condition of product, the condition of similar product, and product differentiation*. Even though each country within the region offers similar products, consumers are still satisfied when they choose similar or differentiated products in those destinations because they look for new experiences (see table 23 in appendices: Thailand Tourism Receipts from International Tourist Arrival: January December 2010

5.3.4 Expenditures on Research and Development (R&D)

Research and Development (R&D)¹²⁷ in the scientific sector operated by technological organisations or companies shows their will to find new designs. This can be an expensive adventure given the cost of material, machines, and skilled specialists. In return, the development of new design can bring back financial reward, as well as the benefits of developing new software.

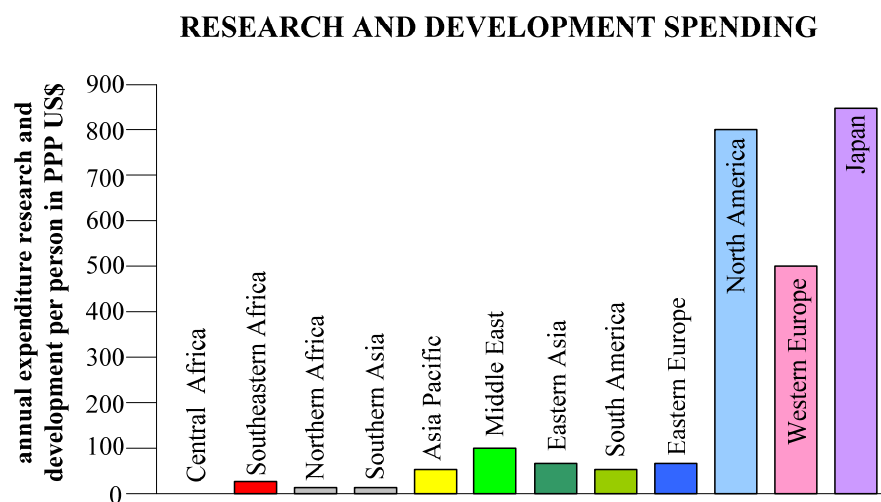


Figure 17: Research and Development Expenditure World Wide, 2004

¹²⁷ Research and Development (R&D) as creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock knowledge to devise new applications.

In its 2011 report, the Organisation for Economic Co-Operation and development (OECD)¹²⁸ also uses R&D expenditures as an indicator for an economy's relative degree of investment in generating new knowledge. Several countries have adopted "targets" for this indicator to help focus policy decision and public funding. These elements are also to be related to the gross domestic expenditure on R&D (GERD)¹²⁹.

Depending on Research and Development (RD) expenditures expressed in USD in local purchasing power spent per person relative to the total population in 2004¹³⁰, R&D spending was near 0 in territories in Central Africa and Paraguay.

Highest and Lowest Research and Development Expenditures compared World Wide

Ranking	Territory	Value (USD)
1	Luxemburg	1310
2	Sweden	1202
3	Israel	1017
4	US	992
5	Finland	890
6	Iceland	840
7	Japan	833
8	Switzerland	790
9	Germany	678
10	Denmark	647

Ranking	Territory	Value (USD)
180	Chad	2.77
181	Nepal	2.69
182	Nigeria	2.54
183	Nicaragua	2.49
184	Mali	2.26
185	Niger	2.14
186	Burkina Faso	2.06
187	Guinea-Bissau	1.93
188	Sierra-Leone	1.52
189	Madagascar	0.72

Table 24: Highest and Lowest Research and Development Expenditures World Wide, 2004

¹²⁸OECD Science, Technology and Industry Scoreboard 2011. OECD, 2011, p.76.

¹²⁹GERD is usually broken down among four sectors: higher education, government, and private not-for-profit institutions serving households (PNP).

¹³⁰EUROPEAN UNION, EUROSTAT, Tourism Statistics, 2010, cited in http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Tourism_statistic

Compared to the country where R&D expenditure was the highest – Luxembourg with US\$1310 spent per inhabitant – Madagascar, the country with the lowest expenditure had not even a dollar per inhabitant spent in its R&D sector. Undoubtedly, the number of patents granted, the value of royalties and license fees received by these two countries also suffered a huge difference.

5.3.5 R&D: Fundamental Source of Innovation Growth

Concerning science and innovation, many countries are building centres of excellence based on their local strengths¹³¹ in order to create the optimum conditions for raising research quality and impact. Non-OECD economies account for a growing share of the world's R&D, measured in terms of both number of researchers and R&D expenditures. Worldwide, the 50 universities with the highest impact – measured by normalised citations to academic publications across all disciplines – are concentrated in a handful of countries. Overall, 40 of the top 50 are located in the United States, and the rest in Europe. A more diverse picture emerges on a subject-by subject basis. There is evidence that some universities in Asia are emerging as leading research institutions. Many of the leading firms in knowledge-intensive industries such as ICT and the life sciences have emerged in a limited number of regions in the world.

Business Enterprise Expenditure on Research and Development (BERD) is considered important for innovation and economic growth. In OECD countries, business R&D reached 1.6% of OECD GDP in 2008, up slightly from 1.5% in 1999. Foreign affiliates can play an important role in national R&D efforts. In 2007-2008, they accounted for more than one fifth of total business R&D in most OECD members. Moreover, SMEs also play an important role in the R&D effort, their share in total BERD tends to be larger in smaller economies, for example, 73% in New Zealand, 71% in Estonia, and 63% in Chile compared to less than 20% in France, Sweden, Finland, the USA, and Germany, and only 6% in Japan¹³².

¹³¹OECD., *OECD Science. Technology and Industry Scoreboard*, 2011, pp 15.

¹³²OECD., *OECD Science. Technology and Industry Scoreboard*, 2011, pp 80.

On the case of the importance of collaboration and multidisciplinary applied in different countries and especially developing countries, a study focusing on R&D¹³³ showed that government funding of business R&D is a substitute to fiscal incentives and is complementary to university research, and yet does not interact with government research. In other words, increasing direct funding (tax incentives) of business research reduces the stimulating effect of tax incentives (direct government funding).

When government research funding of business is high, the negative effect of university research is reduced. This result can be interpreted as government funding helping firms to digest knowledge coming from university. In this way, this result also shows the potential usefulness of university research to the economy, and how complementary instruments are implemented to help its results to be transferred to firms.

As far as technology in tourism is concerned, it is obvious that technologically advanced countries which invest heavily in research and development in order to improve design, infrastructure, accessibility, and facilities in their tourism sector will gain higher value and profits at the same time.

¹³³OECD., *The impact of public R&D expenditure on business* , 2000, pp 17.

CHAPTER 6: TESTS ON TECHNOLOGICAL FACTORS THROUGH TOURISM INVESTMENT AND EXPENDITURES

6.1 Test Context

6.1.1 Purpose of the Test

The purpose of the test is to demonstrate the importance of technology in international tourism specialisation by using the following assumptions: is the Technological factor important or does it simply explain the process of international specialisation in tourism?. Are investment and research and development the fundamental sources of technology growths in tourism?. Lastly, can the capacity reinforcement of technology establish a better partnership in international tourism specialisation?.

According to the hypothesis presented in this study, it can be reaffirmed that tourism investment is aimed at improving tourism innovation & technology, products & marketing, and at developing sector infrastructure. Technological development includes the creation of new products, new production process, and new raw materials to meet customer satisfaction. It also includes the importation of knowhow from developed country as well as the development of infrastructure (accessibility, facility, and mode of transportation, for example) in order to facilitate tourist access.

Tourism development always focuses both on the domestic and international market. In this test, domestic and international tourism expenditures have been used to compare and differentiate data from the years of 2000 and 2010. Even though most studies concerned with international tourism do not include it, the domestic market is also significant in the way countries shape their tourism policies, and this will be discussed in the “*interpretation and discussion*” section.

6.1.2 Test Application on Domestic Expenditures

The test application on domestic expenditures consists in finding tourism data related to technology, as well as in synthesising the correlation between tourism and technological factors which appear in *domestic tourism expenditure, tourism investment, and expenditure on R&D*. This will be achieved by using Ratio1 (R1) in order to compare their proportions between 2000 and 2010.

Ratio1 (R1) is the proportion resulting from *domestic tourism expenditure/ tourism investment*. If the ratio has a value higher than 1, it can be interpreted that the country has higher domestic tourism receipts than tourism investments.

- **Tourism Investment:** Tourism investment is one of the significant keys for technological tourism development in terms of infrastructure, transport, new tourism product developments, and imported know how from developed countries. In addition, tourism investment represents the level of technology in the country.

WTTC has defined tourism investment in terms of capital investment realised by all sectors directly involved in the Travel & Tourism industry. This also includes investment spending by other industries on specific tourism assets such as new visitor accommodation and passenger transport equipment, as well as restaurants and leisure facilities for specific tourism use¹³⁴.

- **Domestic Tourism Expenditures:** In this test application, domestic travel and tourism expenditure is used in order to analyse and find significant results. The amount of domestic expenditure is a significant key leading to the developing factors of international tourism specialisation in the country.

This can be supported and correlated with Linder's theory of Demand who stated that even though the theory focused on the domestic rather than foreign markets, the existence of a representative domestic demand is a prerequisite for export. Products developed as a response to this local demand are opportunities to reach the global market. International specialisation then absorbs the variety

¹³⁴ WORLD TRAVEL&TOURISM COUNCIL (WTTC), *Economics Data and Forecast*, 2011.

of products belonging to the same class. Domestic Expenditure is the amount of money spent within a country by its residents for both business and leisure trips.

The equation can be demonstrated as follows;

$$R1 = \frac{\textit{Domestic tourism Expenditures}}{\textit{Tourism Investment}}$$

Possible interpretations can be the following ones (The Test Application on Visitor Exports is also included in this interpretation):

- If ratio 1 has a value that is higher than 1, the country has higher tourism receipts than tourism investments.
- If the ratio is very high for example 10, 12, 15 or even 20, this means that these country groups have low investments in technologies influencing the quality of tourism amenities, supply, and/or infrastructure.
- If ratio1 has a value that is below 1, this indicates that those country groups have no focus on domestic or international tourism. In 2010 for example, China had a ratio1 of 3.11 and a ratio2 of 0.62

The year 2000 opened a new millennium relying heavily on digital technology. For the following decade, various phenomenon occurred, among which the emergence and proliferation of inventions in the telecommunication sector which greatly influenced tourist behaviour and fetching of information. Hence, comparing 2000 to 2010 will yield clear distinctions and understanding of the evolutions.

Expenditure on Research and Development (R&D) has already been expressed as a percentage of the concerned country's GDP. As mentioned and discussed in chapter 5, if the country invests heavily in research and development oriented towards new technology, it will gain high value and profits in return of its investment.

However, expenditure on R&D has been analysed in the test application only according to its relevance in advanced country groups, as the data collection from the Organisation for Economic Co-Operation and Development (OECD) mainly deals with this country group.

6.1.3 Test Application on Visitor Exports

The test application on visitor exports refers to the correlation between international tourism and the importance of technological factors. Moreover, Ratio 2 (R2) has been applied to test the correlation between visitor exports and tourism investment.

Ratio2 (R2): is the proportion resulting from *visitor exports expenditure/ tourism investment*. If ratio 2 has a value higher than 1, it can be interpreted that the country has higher international tourism receipt than tourism investment.

The equation can be demonstrated as follows;

$$R2 = \frac{\text{Visitor Exports}}{\text{Tourism Investment}}$$

- Visitor exports

In this test application, the results of visitor exports in each country are used in order to analyse and find significant results, and it is clear that visitor exports are essential indicators of the country's international tourism specialisation.

The visitor exports consist in spendings realised within the country by international tourists for both business and leisure trips, including spendings on transport. This is consistent with total inbound tourism expenditure¹³⁵. In addition, another similar definition of international *tourism receipts* is provided by UNWTO as being the expenditure of international inbound visitors including their payments to national carriers for international transport. They also include

¹³⁵ WORLD TRAVEL&TOURISM COUNCIL (WTTC), *Economics Data and Forecast*, 2011.

any other payments or payments made afterwards for goods and services received in the destination country¹³⁶.

- **Tourism Investment:** defined in the same terms of application as in the test application on domestic expenditures.

6.2 Results of the Tests

6.2.1 Country Group Classification

The country group classification used in this study is the one presented in the World Bank's data. According to the World Bank definition of country classification of 2010¹³⁷, the main criteria for classifying economies is their gross national income (GNI) or referred gross national product (GNP) per capita. Based on its GNI per capita, every economy is classified as low income, middle income (subdivided into lower middle and upper middle), or high income. Other analytical groups based on geographic regions are also used.

(a) Advanced Countries

An advanced country is a country that has a high level of development according to the above criteria. Terms bearing a close definition to that of advanced country include developed country, and industrialised country. According to the 2010 figures on their income per capita, economies are divided referring to their GNI per capita. The calculation is realised using the World Bank Atlas method¹³⁸ and included the highest income as \$12,276 or more.

¹³⁶ UNWTO cited in http://www.stat.fi/meta/kas/kv_matktulo_en.html

¹³⁷ <http://data.worldbank.org/about/country-classifications>

¹³⁸ The World Bank, Data & Statistics/ Country Group cited in <http://econ.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS>

(b) Developing Countries

Low income and middle-income economies are sometimes referred to as developing economies. Lower middle income is situated \$1,006 and \$3,975; upper middle income between \$3,976 and \$12,275. The use of the term is convenient; it is not intended to imply that all economies in the group are experiencing similar development or that other economies have reached a preferred or final stage of development. Classification by income does not necessarily reflect development status.

- New Industrial Countries (NICs)

The category of New Industrial Countries (NICs) are countries whose economies have not yet reached advanced countries status but have, in a macroeconomic sense, surpassed their developing counterparts¹³⁹. Another characterisation of NICs is that of nations undergoing rapid economic growth (usually export-oriented). Ongoing industrialisation is an important indicator of a NIC. In many NICs, major social changes can occur affecting primarily rural or agricultural areas populations thus migrating to the cities, where the growth of manufacturing concerns and factories can draw many thousands of workers.

Country	GDP (PPP) (Billions of USD, 2010 World Bank)	GDP per capita (PPP) (USD,2010 World Bank)	Income equality (GINI) 2006	Human Development Index (HDI, 2010)	GDP (real) growth rate as of 2010	GDP (real) growth rate per capita as of 2008
South Africa	524,198	10,492	57.8	0.597 (medium)	2.78	1.29
Mexico	1,652,168	15,224	46.3	0.750 (high)	5.52	0.75
Brazil	2,169,180	11,127	54	0.699 (high)	7.49	4.06
China	10,084,764	7,536	44.7	0.663 (medium)	10.3	10.4
India	4,198,609	3,586	32.5	0.519 (medium)	10.37	8.5
Malaysia	414,395	14,845	49.2	0.744 (high)	7.16	2.86
Philippines	367,425	3,925	44.5	0.638 (medium)	7.6	1.97
Thailand	586,824	8,612	42	0.654 (medium)	7.8	1.84
Turkey	1,115,994	14,741	38	0.679 (high)	8.2	-0.34

Table 25: List of New Industrial Countries (NICs)

Source: http://en.wikipedia.org/wiki/Newly_industrialized_country,

¹³⁹ http://en.wikipedia.org/wiki/Newly_industrialized_country

NICs usually share some other common features, including:

- Strong political leaders.
- A switch from agricultural to industrial economies, especially in the manufacturing sector.
- An increasingly open-market economy, allowing free trade with other nations in the world.
- Large national corporations operating in several continents.
- Strong capital investment from foreign countries.
- Political leadership in their area of influence.
- Lowered poverty rates.

(c) Least Developed Countries (LDCs)

LDCs display low incomes per capita: \$1,005 or less. According to the International Development Association (Borrowing-IDA), LDCs were in 2010 countries which had a per capita income lower than \$1,175 and lacked the financial ability to borrow funds from the International Bank for Reconstruction and Development (IBRD). IDA loans are deeply concessional interest-free loans and grants for programs aimed at boosting economic growth and improving living conditions.

The Least Developed Countries represent the poorest and weakest segment of the international community. They comprise more than 880 million people (about 12 per cent of world population), but account for less than 2 percent of world GDP and about 1 percent of global trade in goods.

Their low level of socio-economic development is characterised by weak human and institutional capacities, low and unequally distributed income and scarcity of domestic financial resources. They often suffer from governance crisis, political instability and, in some cases, internal and external conflicts. Their largely agrarian economies are affected by a vicious cycle of low productivity and low investment. They rely on the export of few primary commodities as major source of export and fiscal earnings, which makes them highly vulnerable to external terms-of-trade shocks. Only a handful has been able to diversify into the manufacturing sector, though with a limited range of products in labour-intensive industries, i.e. textiles and clothing. These constraints are responsible for

insufficient domestic resource mobilization, low economic management capacity, weaknesses in programme design and implementation, chronic external deficits, high debt burdens and heavy dependence on external financing that have kept LDCs in a poverty trap. The category of LDCs was officially established in 1971 by the UN General Assembly with a view to attracting special international support for the most vulnerable and disadvantaged members of the UN family. The current list of LDCs includes 48 countries; 33 in Africa, 14 in Asia and the Pacific and 1 in Latin America.

List of LDC Countries according to UN-OHRLLS's data¹⁴⁰.

Africa (33 countries)

1	Angola	18	Madagascar
2	Benin	19	Malawi #
3	Burkina Faso #	20	Mali #
4	Burundi #	21	Mauritania
5	Central African Republic #	22	Mozambique
6	Chad #	23	Niger #
7	Comoros *	24	Rwanda #
8	Democratic Republic of the Congo	25	São Tomé and Príncipe *
9	Djibouti	26	Senegal
10	Equatorial Guinea	27	Sierra Leone
11	Eritrea	28	Somalia
12	Ethiopia #	29	Sudan
13	Gambia	30	Togo
14	Guinea	31	Uganda #
15	Guinea-Bissau *	32	United Republic of Tanzania
16	Lesotho #	33	Zambia #
17	Liberia		

Asia (14 countries)

1	Afghanistan #	8	Nepal #
2	Bangladesh	9	Samoa *
3	Bhutan #	10	Solomon Islands *
4	Cambodia	11	Timor-Leste *
5	Kiribati *	12	Tuvalu *
6	Lao People's Democratic Republic #	13	Vanuatu *
7	Myanmar	14	Yemen

Latin America and the Caribbean (1 country)

1	Haiti *
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* Also a Small Island Developing State

Also a Landlocked Developing Country

¹⁴⁰ <http://www.unohrlls.org/en/lhc/25/>

6.2.2 Analysis of the Tests by Country Group Classification

The overall results from the test application and the comparison between 2000 and 2010 demonstrate that a country that has a high proportion in tourism investment can encourage its receipt arising from domestic expenditure and visitor exports. Indeed, the results show the high efficiency of tourism investment.

Obviously, the results of visitor export's expenditures show that ratio 2 in the advanced country group is not very high in average. This can be explained by its link with tourism investment in terms of technology development. In contrast, developing countries and especially countries whose economy is based on the revenue yielded by tourism such as Hong Kong and Macao, display a quite strong ratio 2. It can also be noted that these countries focus on international tourism.

The test indicates clearly that Island country groups (Caribbean Sea, Mauritius, etc), and small and NIC countries, e.g. Macao, Hong Kong, Taiwan, as well as Thailand and Malaysia focus on international tourism development. Moreover, it can be said that these types of country groups are what is usually referred to the New Tourism Destinations.

Country	Ratio 1 Domestic tourism expenditure/Tourism Investment		Ratio 2 Visitor Exports/Tourism Investment	
	2000	2010	2000	2010
Cuba	2.38	2.06	6.79	2.71
Dominican Rpt	4.17	3.56	18.56	12.01
Hong Kong	1.95	1.27	3.61	4.88
Macao	1.48	0.16	24.02	9.43
Madagascar	1.25	0.50	3.80	2.31
Mauritius	1.03	2.38	7.32	11.56
Malaysia	1.01	2.39	1.70	4.19
Singapore	1.08	0.39	1.69	0.89
Taiwan	3.29	2.83	1.37	1.68
Thailand	1.91	1.51	3.46	2.85

Table 26: Island Groups and NIC Countries

The results concerning the Caribbean countries group demonstrate that ratio1 and ratio 2 were high both in 2000 and in 2010. Undoubtedly, the Dominican Republic's ratio2 was very high (18.56 in 2000 and 12.01 in 2010). In comparison, ratio1 for the same country was quite average (4.17 in 2000 and 3.56 in 2010).

Nevertheless, we can see that the volume of tourism investment in the Caribbean group seemed to be low (Cuba 0.87 US bn, Dominican Republic 0.15 US bn). On this precise point, it has to be reminded that tourism requires large capital investments because of the infrastructure necessary to attract greater numbers of tourists.

Notably, Singapore and Taiwan are countries whose revenues come from international trade, therefore, ratio1 and ratio 2 are quite weak.

According to the table below, the top 10 countries with the largest total population, display a greater efficiency in their ratio 1 results when comparing domestic tourism expenditures between 2000 and 2010.

Country	Ratio 1 Domestic tourism expenditure/Tourism Investment		Ratio 2 Visitor Exports/Tourism Investment	
	2000	2010	2000	2010
China	3.79	3.11	1.10	0.62
India	16.42	2.93	1.85	0.58
USA	5.00	5.23	1.21	1.24
Indonesia	3.02	2.76	2.01	0.76
Brazil	5.03	5.01	0.26	0.30
Pakistan	11.80	5.17	2.24	0.64
Nigeria	26.27	2.50	3.10	0.60
Russia	2.49	3.11	2.74	1.98
Bangladesh	12.34	8.94	0.45	0.19
Japan	14.00	15.40	0.26	0.40
Mexico	9.36	6.09	1.45	1.16

Table 27: The Top Ten Countries with the Largest Population

Whenever a ratio is equal or above 3 in this table, it can be explained by high volumes of investment in the tourism sector. In the case of Japan, notably, ratio1 was extremely high (14.00 in 2000 and 15.40 in 2010) which can be explained by the fact that Japan is part of the largest countries in terms of population (127,720,000) and bears a considerable advance in the technology sector. Therefore the main focus in this country is directed towards domestic tourism. Undoubtedly, the technological factor played a major role in the development of tourism in this country. In contrast, in this group of largest countries, ratio2 (visitor exports) is lower than ratio1 on the average. For example, in 2010, Brazil's ratio1 was 0.3, Mexico's 1.16, USA's 1.24, China's 0.62, India's 0.58, and Indonesia's 0.76.

Some countries defined as “Man Made Tourism Countries” such as the UAE had a visitor export receipt amounting to US\$6.526bn in 2000 compared to US\$25.094bn in 2010. In comparison, ratio2 has declined from 3.40 to 2.07 between 2000 and 2010, however, these results seem to be satisfying if we compare tourism investment in 2000, US\$1.92bn, to US\$12.10bn in 2010.

According to the test, most countries whose ratio appeared to be very high, as high as 10, 12, or 15 for example, can be said to have limited investments in technology, which in turn can be explained as being related to the quality of their tourism products, their infrastructure, and the accessibility they offer for example.

(a) Advanced Countries

Concerning the overall result in domestic expenditure and visitor export in advanced countries, it can be said that most countries in the advanced group display a solid technological sector and an innovating economy which supports strong tourism development.

The countries who had a high volume of tourism investment such as the USA, Japan, Germany, France, Australia, and the UK, for example, had a positive correlation between tourism investment and the ratio of domestic expenditures and visitor exports between the year of 2000 and 2010. For example, the USA invested about 98 US\$ bn in tourism development in 2000 and about 128 US\$ bn in 2010; therefore, the ratio1 was 5 in 2000 and 5.32 in 2010.

Country	Tourism	Expenditure	Domestic	Ratio1	Visitor	Ratio2
	Investment	in R&D	T. Expenditure	Dom. T. Expenditure/ Investment	Export	Visitor Export/ Investment
Advanced Countries	(US\$ bn)	(%)	(US\$ bn)		(US\$ bn)	
Australia						
2000	4.678	1.32	32.509	6.95	13.016	2.78
2010	18.746	1.94	72.570	3.87	35.902	1.92
Austria						
2000	2.784	0.65	9.490	3.41	11.382	4.09
2010	3.725	0.92	12.486	3.35	21.130	5.67
Belgium						
2000	1.885	0.8	8.679	4.60	8.284	4.39
2010	2.161	0.8	8.025	3.71	10.559	4.89
Canada						
2000	4.010	0.38	24.197	6.03	13.035	3.25
2010	9.685	2.51	34.970	3.61	18.903	1.95
Czech Rep						
2000	0.920	0.31	4.495	4.89	2.973	3.23
2010	1.770	0.41	4.490	2.54	7.110	4.02
Denmark						
2000	2.260	0.47	6.680	2.96	3.990	1.77
2010	2.150	0.64	8.300	3.86	6.990	3.25
France						
2000	9.369	4.97	91.655	9.78	36.364	3.88
2010	15.488	4.97	135.921	8.78	53.878	3.48
Germany						
2000	12.621	7.27	76.014	6.02	24.940	1.98
2010	18.664	8.48	74.607	4.00	47.429	2.54
Greece						
2000	3.505	0.21	3.747	1.07	8.746	2.50
2010	7.473	0.21	14.667	1.96	14.156	1.89
Hungary						
2000	0.640	0.12	1.575	2.46	3.809	5.95
2010	0.920	0.21	3.678	4.00	7.723	8.39
Ireland						
2000	1.556		2.833	1.82	3.517	2.26
2010	2.954	0.29	1.182	0.40	7.601	2.57
Italy						
2000	7.524	2.23	59.289	7.88	28.706	3.82
2010	14.718	2.54	77.893	5.29	42.049	2.86
Japan						
2000	22.982	14	194.894	8.48	5.970	0.26
2010	33.870	15.4	215.945	6.38	13.468	0.40
Luxembourg						
2000	0.106	0.07	0.337	3.18	0.828	7.81
2010	0.313	0.07	1.231	3.93	1.421	4.54
Netherlands						
2000	2.995	1.43	22.580	7.54	11.285	3.77
2010	4.255	1.29	23.007	5.41	18.867	4.43

Country	Tourism Investment	Expenditure in R&D	Domestic T. Expenditure	Ratio1 Dom. T. Expenditure/ Investment	Visitor Export	Ratio2 Visitor Export/ Investment
Advanced Countries	(US\$ bn)	(%)	(US\$ bn)		(US\$ bn)	
New Zealand						
2000	0.558	0.13	5.216	9.35	2.835	5.08
2010	1.466	0.16	10.780	7.35	5.474	3.73
Portugal						
2000	1.544	0.17	5.364	3.47	6.027	3.90
2010	3.429	0.41	8.403	2.45	12.935	3.77
Russia						
2000	1.250	2.49	8.308	6.65	3.429	2.74
2010	6.970	3.11	47.040	6.75	13.775	1.98
Spain						
2000	7.065	1.43	37.285	5.28	32.656	4.62
2010	16.552	2.12	74.495	4.50	57.881	3.50
South Africa						
2000	1.220		6.445	5.28	3.338	2.74
2010	5.550		19.192	3.46	10.452	1.88
South Korea						
2000	4.210	4.07	19.398	4.61	8.527	2.03
2010	6.370	4.55	30.920	4.85	13.556	2.13
Sweden						
2000	0.915	1.39	5.728	6.26	4.825	5.27
2010	2.166	1.39	6.478	2.99	12.456	5.75
UK						
2000	8.599	4.15	75.462	8.78	29.980	3.49
2010	13.233	4.15	82.210	6.21	38.846	2.94
United States						
2000	98.343	38.29	491.768	5.00	118.630	1.21
2010	128.684	41.24	673.200	5.23	159.925	1.24

Table 28: The Ratios of Domestic Expenditures and Visitor Export in Advanced Countries

For the countries who had lower tourism investment, it can be indicated that they are mostly small countries such as Luxembourg, Belgium, and Austria. From another point of view, Russia, Portugal, and Ireland, also had low investment. Greece had high investment in tourism however the result of the ratio 1 was less than 2, and the ratio 2 was 1.89 in 2010. In the same case of Ireland, the ratio1 was 1.82 in 2000 and 0.40 in 2010. This result reflects the recent public debt of these countries.

Referring to expenditures in Research and Development (R&D) in advanced countries, the United States was the country that has the highest potential on research and development expenditures (38% and 41% in 2000 and 2010 respectively). Japan and Germany, the percentage of R&D investment had not fluctuated very much between 2000 and 2010 (14% and 15% for Japan, and 7% and 8% for Germany). The United Kingdom, France, and South Korea had a similar percentage on R&D's expenditures which was approximately 4%. Furthermore, the rest of the country in advanced groups had low percentages on R&D's expenditures.

EUROPE	Ratio1 Dom. T. Expenditure/ Tourism Investment		
	Country	2000	2010
1	Austria	3.41	3.35
2	Belgium	4.60	3.71
3	Bulgaria	4.91	1.78
4	Czech Rep	4.89	2.54
5	Denmark	2.96	3.86
6	Estonia	1.00	1.60
7	France	9.78	8.78
8	Germany	6.02	4.00
9	Greece	1.07	1.96
10	Hungary	2.46	4.00
11	Ireland	1.82	0.40
12	Italy	7.88	5.29
13	Kazakhstan	0.68	2.07
14	Luxembourg	3.18	3.93
15	Netherlands	7.54	5.41
16	Poland	1.85	1.81
17	Portugal	3.47	2.45
18	Romania	8.65	2.76
19	Russia	6.65	6.75
20	Spain	5.28	4.50
21	Sweden	6.26	2.99
22	UK	8.78	6.21
23	Ukraine	8.73	5.57

Table 29: The Ratio1 (R1) of The European Countries

The table 29 of ratio 1 above refers to domestic tourism expenditures, most European countries are classified as “advanced country groups”. The result found that the ratio 1 largely presented higher than ratio 2, this indicates that the domestic tourism has more potential than international tourism in this region.

France became the first ranking in ratio1 in the year of 2000 and 2010 (9.78 and 8.78). Germany (6.02 and 4.00), UK (8.78 and 6.21), Italy (7.88 and 5.29), Netherlands (7.54 and 5.41), Russia (6.65 and 6.75), and Ukraine (8.73 and 5.57) have shown potential respectively in ratio 1 and there were slightly different ratios during the years 2000 and 2010.

It is noticeable that most East European regions presented the extremely high volume in tourism investment during the years 2000 to 2010. It also demonstrated the various proportions in ratio 1 between 2000 and 2010, Bulgaria (4.91 and 1.78), Czech Rep. (4.89 and 2.54), and Romania (8.65 and 2.76). If comparing the ratio 1 with tourism investment, the investment was raised about double in ten years. However, the ratio 1 has clearly declined, this indicates that although, there was increasing in tourism investment in this region the domestic expenditures has not grown parallel with the proportion of investment. Therefore, it might affect the ratio which is tends to be lower; however, the trend of domestic expenditures of this region is still increasing.

The table of ratio 2 (R2) represents the visitor exports of European countries. In general, it can be found that the ratio 2 of the most countries had not changed dramatically between the years of 2000 and 2010. Besides, it remained in proportion with the ratio 1 in 2010.

As R2 refers to visitor exports, the test found that the countries that have R2 between 3 and 5, and the ratio is slightly fluctuated from 2000 and 2010, are mainly situated in the Western European region: France (3.88 and 3.48), Netherlands (3.77 and 4.43), Spain (4.62 and 3.50), Italy (3.82 and 2.86), Austria (4.09 and 5.67), and Belgium (4.39 and 4.89). These results show that the tourism investment has grown continually and there is little effect in this region. As a result, there is a positive correlation and balance between the investments and receipts.

Surprisingly, the R2 fell dramatically in Romania (as the same case with R1), 1.79 in 2010 from 5.04 in 2000. Regarding investment, it increased over ten times from 0.08 to 1.03 US\$ bn during the years 2000 and 2010. However, both domestic expenditures and visitor exports still multiplied over four times from 2000 to 2010.

EUROPE	Ratio2 Visitor Export/ Tourism Investment		
	Country	2000	2010
1	Austria	4.09	5.67
2	Belgium	4.39	4.89
3	Bulgaria	7.75	7.13
4	Czech Rep	3.23	4.02
5	Denmark	1.77	3.25
6	Estonia	7.30	5.89
7	France	3.88	3.48
8	Germany	1.98	2.54
9	Greece	2.50	1.89
10	Hungary	5.95	8.39
11	Ireland	2.26	2.57
12	Italy	3.82	2.86
13	Kazakhstan	0.89	0.83
14	Luxembourg	7.81	4.54
15	Netherlands	3.77	4.43
16	Poland	5.15	3.58
17	Portugal	3.90	3.77
18	Romania	5.04	1.79
19	Russia	2.74	1.98
20	Spain	4.62	3.50
21	Sweden	5.27	5.75
22	UK	3.49	2.94
23	Ukraine	4.43	7.38

Table 30: The Ratio2 (R2) of The European Countries

b) Developing Countries

- Asia

East Asia region (China, Japan, and South Korea, for example), the R1 has more durable than R2. This result related to the volume of population of the country as well as the domestic tourist's potential expenditures in the country.

China is the strongest country in East Asian country in terms of tourism investment. In the year 2000, China invested 15.8 US\$ bn and 80.6 US\$ bn in 2010, domestic expenditures in 2000 was 59.84 and 250.709 US\$ bn in 2010. These statistics dramatically increased in 10 years, and it can be expressed from this study that China is the second highest tourism investment country in the world after the United States.

Clearly, the result of the ratio in China illustrates that R1 became more stable than R2. Since China is the largest country regarding population, the domestic market is stronger than international markets. Yet, visitor exports still continued to increase by the year of 2010 which made China third in international arrivals and fourth in visitor exports in the world (ranked by UNWTO, 2010).

NICS countries are gathered in the South East Asian countries, Thailand, Malaysia, and Indonesia. The international tourism receipts was higher than domestic receipts in 2000 and 2010. This can be explained by the fact that the receipts of these countries mainly come from international markets. Comparing 2000 and 2010, tourism investments in Thailand (2.8 and 7.9 US\$ bn) and Indonesia (2.5 and 10.6 US\$ bn) have increased dramatically. This statistic reflects the readiness of the country to develop its tourism quality product.

The new tourism destinations, Macao (casino tourism) and Hong Kong (shopping destination), rely heavily on revenue from tourism, especially international tourism. Thus, R2 showed higher than R1 in these destinations.

Country	Tourism	Domestic	Ratio1	Visitor	Ratio2
	Investment	T. Expenditure	Dom. T. Expenditure/	Export	Visitor Export/
Developing	(US\$ bn)	(US\$ bn)	Investment	(US\$ bn)	Investment
Countries					
China					
2000	15.800	59.840	3.79	17.318	1.10
2010	80.600	250.709	3.11	49.739	0.62
Hong Kong					
2000	2.280	4.451	1.95	8.236	3.61
2010	4.490	5.712	1.27	21.933	4.88
India					
2000	1.940	31.859	16.42	3.598	1.85
2010	22.900	67.061	2.93	13.383	0.58
Indonesia					
2000	2.590	7.827	3.02	5.214	2.01
2010	10.600	29.273	2.76	8.042	0.76
Macau(China)					
2000	0.140	0.207	1.48	3.363	24.02
2010	2.070	0.322	0.16	19.517	9.43
Malaysia					
2000	3.450	3.493	1.01	5.873	1.70
2010	4.490	10.737	2.39	18.813	4.19
Pakistan					
2000	0.246	2.903	11.80	0.551	2.24
2010	1.440	7.443	5.17	0.920	0.64
Philippines					
2000	0.695	7.177	10.33	2.334	3.36
2010	1.680	12.806	7.62	3.934	2.34
Singapore					
2000	3.040	3.289	1.08	5.142	1.69
2009	11.600	4.529	0.39	10.318	0.89
Sri Lanka					
2000	0.236	0.457	1.94	0.388	1.64
2010	0.528	1.181	2.24	1.009	1.91
Taiwan					
2000	3.100	10.192	3.29	4.253	1.37
2010	4.870	13.784	2.83	8.193	1.68
Thailand					
2000	2.870	5.485	1.91	9.935	3.46
2010	7.930	12.001	1.51	22.636	2.85
Vietnam					
2000	0.332	1.208	3.64	1.078	3.25
2010	4.230	2.901	0.69	3.582	0.85

Table 31: The Ratios of Domestic Expenditures and Visitor Export in Asian Countries

The table 32 below shows the ratio 1 of Asia and Pacific regions. In 2000, the proportion of R1 jumped to more than 10 in these countries: Philippines (10.33), Pakistan (11.80), Bangladesh (12.34), India (16.42), and Cambodia (22.50). Particularly, Cambodia, there is an extreme variation between 2000 and 2010, the R1 fell down to 0.98. Regarding tourism investment, government investment has boosted it 6 times (from 40 to 245 US\$ bn) during ten years. However, the receipts in return were not sufficient. Some explanations include that there might be an internal difficulty in the country such a politics, policy, and/or development as well as domestic tourist behaviour during this period. The case of India, the R1 dropped down from 16.42 to 2.93 compared to investment which shot up from 1.9 to 22.9 US\$ bn. Clearly, the profits from the return from the investment were not successful.

Asia &Pacific	Ratio1 Dom. T. Expenditure/ Investment		
	Country	2000	2010
1	Australia	6.95	3.87
2	Bangladesh	12.34	8.94
3	Cambodia	22.50	0.98
4	China	3.79	3.11
5	Hong Kong	1.95	1.27
6	India	16.42	2.93
7	Indonesia	3.02	2.76
8	Japan	8.48	6.38
9	Lao PDR	2.00	1.08
10	Macao	1.48	0.16
11	Malaysia	1.01	2.39
12	Myanmar	4.30	9.42
13	Nepal	1.00	2.32
14	New Zealand	9.35	7.35
15	Pakistan	11.80	5.17
16	Philippines	10.33	7.62
17	Singapore	1.08	0.39
18	South Korea	4.61	4.85
19	Sri Lanka	1.94	2.24
20	Taiwan	3.29	2.83
21	Thailand	1.91	1.51
22	Vietnam	3.64	0.69

Table 32: The Ratio1 (R1) of Asian Countries

The countries in this region that have a stable R1 between the years 2000 and 2010 are: Thailand (1.91 and 1.51), Malaysia (1.01 and 2.39), and Hong Kong (1.95 and 1.27). In these country groups, the R1 was gradually lower than R2 again, as they are “Tourism Destination Countries” where international tourism has more potential than domestic markets.

In the Pacific region, Australia and New Zealand, the R1 had more potential than R2 (6.95 and 3.87/9.35 and 7.35) in 2000 and 2010 respectively. This country type shows the character of an advanced country group in which the domestic market has more effect than international markets.

Asia & Pacific	Ratio2 Investment/ Visitor Export		
	Country	2000	2010
1	Australia	2.87	1.92
2	Bangladesh	0.45	0.19
3	Cambodia	8.63	5.83
4	China	1.10	0.62
5	Hong Kong	3.61	4.88
6	India	1.85	0.58
7	Indonesia	2.01	0.76
8	Japan	0.26	0.40
9	Lao PDR	5.85	1.62
10	Macao	24.02	9.43
11	Malaysia	1.70	4.19
12	Myanmar	4.88	0.67
13	Nepal	1.67	3.10
14	New Zealand	5.08	3.73
15	Pakistan	2.24	0.64
16	Philippines	3.36	2.34
17	Singapore	1.69	0.89
18	South Korea	2.03	2.13
19	Sri Lanka	1.64	1.91
20	Taiwan	1.37	1.68
21	Thailand	3.46	2.85
22	Vietnam	3.25	0.85

Table 33: The Ratio2 (R2) of Asian Countries

Again, Thailand, Malaysia, and Hong Kong are indicated to be “Tourism Destinations” of the Asian region, the R2 has more dramatically increased than R1. Especially Malaysia ranked ninth in tourism arrivals and Hong Kong ninth in tourism receipts of international tourism worldwide (UNWTO, 2010).

The case of Sri Lanka, the ratio1 (1.94 and 2.24) and ratio2 (1.64 and 1.91) were quite similar in 2000 and 2010. Notably, there was a civil war for long time, hence, the national budget was directed to the military sector. However, as they opened the country in 2009, the number of international tourists continues to increase.

- Middle East and North Africa

In general, it can be pointed out that the ratio’s growth in the Middle East region is less than other regions. Most countries in this region have a tourism potential according to domestic tourism rather than international tourism. Saudi Arabia positioned itself as a hub of religious tourism thus expanding tourism flows throughout this intra region.

In Saudi Arabia, the investment in 2000 and 2010 has slightly declined from 3.99 to 3.79 US\$ bn. However, the domestic and international receipts increased dramatically. As a result, we can assume that Saudi Arabia invests in high volumes and has profited in returns during these ten years.

The UAE presented distinguished statistics in terms of tourism investment from 1.92 to 12.1 US\$ bn and the visitor exports also correlate with ratio 2. It can be declared from the statistics that the UAE concentrates on international tourism, the visitor exports has risen sharply from about 25 US\$ bn compared to 2000 (6.5 US\$ bn approximately). In contrast, the domestic expenditures do not show the same results, 2.74 to 6.42 during the period of ten years.

Country	Tourism	Domestic	Ratio1	Visitor	Ratio2
	Investment	T. Expenditure	Dom. T. Expenditure/	Export	Visitor Export/
Developing Countries	(US\$ bn)	(US\$ bn)	Investment	(US\$ bn)	Investment
Egypt					
2000	1.410	4.664	3.31	4.657	3.30
2010	5.150	11.300	2.19	12.964	2.52
Israel					
2000	1.900	4.008	2.11	4.611	2.43
2010	1.710	7.368	4.31	4.472	2.62
Jordan					
2000	0.289	0.194	0.67	0.935	3.24
2010	0.541	0.333	0.62	3.646	6.74
Lebanon					
2000	0.211	0.524	2.48	0.900	4.27
2010	1.130	1.274	1.13	8.012	7.09
Morocco					
2000	0.397	1.138	2.87	2.280	5.74
2010	3.130	3.393	1.08	7.928	2.53
Oman					
2000	0.197	0.853	4.33	0.377	1.91
2010	0.765	1.518	1.98	1.165	1.52
Qatar					
2000	0.119	0.421	3.54	0.128	1.08
2010	1.240	1.784	1.44	0.676	0.55
Saudi Arabia					
2000	3.990	4.421	1.11	1.479	0.37
2010	3.790	10.352	2.73	8.278	2.18
Tunisia					
2000	0.766	0.714	0.93	1.977	2.58
2010	0.965	1.862	1.93	3.550	3.68
U A E					
2000	1.920	2.741	1.43	6.526	3.40
2010	12.100	6.425	0.53	25.094	2.07

Table 34: The Ratios of Domestic Expenditures and Visitor Export in Middle East & North Africa

For North African countries, Egypt, Tunisia, and Morocco, these countries' tourism revenues rely mainly on European tourists. The domestic expenditures and visitor exports have similar statistics which continue to grow; this corresponds to the tourism investment during the ten years as well. Egypt, for example, had positive results from investment according to both domestic and international expenditures. Thus, it can be declared that Egypt is the country that satisfies the terms of developing the tourism

Middle East	Ratio1		
	Dom. T. Expenditure/ Tourism Investment		
	Country	2000	2010
1	Egypt	3.31	2.19
2	Israel	2.11	4.31
3	Jordan	0.67	0.62
4	Lebanon	2.48	1.13
5	Morocco	2.87	1.08
6	Oman	4.33	1.98
7	Qatar	3.54	1.44
8	Saudi Arabia	1.11	2.73
9	Tunisia	0.93	1.93
10	U.A.E.	1.43	0.53

Table 35: The Ratio1 (R1) of Middle East & North Africa

The OPEC countries (Organisation of Petroleum Exporting Countries), the R1 has slightly decreased from 2000 to 2010, the UAE (1.43 and 0.53) and Qatar (3.54 and 1.44), for example.

Egypt became the only country in the region where the R1 does not fluctuate too much, 3.31 in 2000 and 2.19 in 2010. The R1 in Jordan represented less than 1 in both 2000 and 2010, 0.67 and 0.62.

Middle East	Ratio2 Visitor Export/ Tourism Investment		
	Country	2000	2010
1	Egypt	3.30	2.52
2	Israel	2.43	2.62
3	Jordan	3.24	6.74
4	Lebanon	4.27	7.09
5	Morocco	5.74	2.53
6	Oman	1.91	1.52
7	Qatar	1.08	0.55
8	Saudi Arabia	0.37	2.18
9	Tunisia	2.58	3.68
10	U.A.E.	3.40	2.07

Table 36: The Ratio2 (R2) of Middle East & North Africa

In general, the countries in Middle East and North Africa illustrated positive results in ratio 2. Only Saudi Arabia and Qatar has the R2 less than 1, Saudi Arabia (0.37 in 2000) and Qatar (0.55 in 2010). This shows that the visitor exports are stronger than domestic expenditures in this region.

- Central and South America

Most countries in Central and South America have large populations. The domestic spending showed to be higher than international expenditures. The tourism investment had high volume investment in the large countries such as Argentina, Brazil, Colombia, and Mexico. Moreover, Brazil and Mexico became the first and second ranked countries to invest heavily in tourism which was 6.292 US\$ bn in 2000 and sharply increased to 12.952 US\$ bn in 2010. These investments relate to the growth of domestic expenditures and visitor exports of these countries whose total growth over ten years was 38.275 and 109.184 US\$ bn for Brazil; and 58.883 and 78.895 US\$ bn for Mexico.

Country	Tourism	Domestic	Ratio1	Visitor	Ratio2
	Investment	T. Expenditure	Dom. T. Expenditure/	Export	Visitor Export/
Developing Countries	(US\$ bn)	(US\$ bn)	Investment	(US\$ bn)	Investment
Argentina					
2000	2.300	13.136	5.71	3.195	1.39
2010	5.530	20.037	3.62	5.072	0.92
Bolivia					
2000	0.090	0.192	2.13	0.101	1.12
2010	0.090	0.378	4.20	0.336	3.73
Brazil					
2000	7.610	38.275	5.03	1.969	0.26
2010	21.800	109.184	5.01	6.474	0.30
Chilli					
2000	0.765	3.907	5.11	1.179	1.54
2010	3.490	10.632	3.05	2.634	0.75
Colombia					
2000	0.538	2.195	4.08	1.313	2.44
2010	3.500	6.985	2.00	2.883	0.82
Costa Rica					
2000	0.104	0.642	6.17	1.477	14.20
2010	0.304	1.281	4.21	2.001	6.58
Cuba					
2000	0.287	0.684	2.38	1.948	6.79
2010	0.873	1.798	2.06	2.367	2.71
Dominican Rp					
2000	0.158	0.659	4.17	2.932	18.56
2010	0.415	1.478	3.56	4.985	12.01
Mexico					
2000	6.292	58.883	9.36	9.133	1.45
2010	12.952	78.895	6.09	15.037	1.16
Panama					
2000	0.163	0.297	1.82	0.628	3.85
2010	0.574	0.790	1.38	2.436	4.24
Paraguay					
2000	0.020	0.145	7.25	0.090	4.50
2010	0.050	0.310	6.20	0.228	4.56
Peru					
2000	0.533	2.925	5.49	0.861	1.62
2010	2.080	8.576	4.12	2.885	1.39
Uruguay					
2000	0.113	0.637	5.64	0.827	7.32
2010	0.615	1.126	1.83	1.474	2.40
Venezuela					
2000	0.877	6.457	7.36	0.469	0.53
2010	2.030	13.072	6.44	0.758	0.37

Table 37: The Ratios of Domestic Expenditures and Visitor Export in Central and South America

In comparison, Paraguay is the country who allocated the least amount to tourism investment in this region from 0.020 to 0.050 US\$ bn from the period of 2000 to 2010. The investment budget in 2000 and 2010 was an equal in Bolivia (0.090 US\$ bn). Bolivia has the poorest scale of domestic and international spending in the region as well.

AMERICA	Ratio1 Domestic Tourism Expenditure/ Tourism Investment		
	Country	2000	2010
1	Argentina	5.71	3.62
2	Bolivia	2.13	4.20
3	Brazil	5.03	5.01
4	Canada	6.03	3.61
5	Chilli	5.11	3.05
6	Colombia	4.08	2.00
7	Costa Rica	6.17	4.21
8	Cuba	2.38	2.06
9	Dominican Rpb	4.17	3.56
10	Mexico	9.36	6.09
11	Panama	1.82	1.38
12	Paraguay	7.25	6.20
13	Peru	5.49	4.12
14	Uruguay	5.64	1.83
15	USA	5.00	5.23
16	Venezuela	7.36	6.44

Table 38: The Ratio 1(R1) of Central and South America

The ratio 1 of Central and South America appears to be more effective than ratio 2. From 2000 to 2010, the proportion of R1 has rarely changed in these countries; Brazil (5.03 to 5.01), Cuba (2.38 to 2.06), Panama (1.82 to 1.38), Paraguay (7.25 to 6.20), and Venezuela (7.36 to 6.44). In general, it can be expressed that the R1 has slightly decreased from 2000 to 2010. This takes into consideration the volume of tourism investment which was quite high therefore it would need the time to generate the profits back.

AMERICA	Ratio2 Visitor Export/ Tourism Investment		
	Country	2000	2010
1	Argentina	1.39	0.92
2	Bolivia	1.12	3.73
3	Brazil	0.26	0.30
4	Canada	3.25	1.95
5	Chilli	1.54	0.75
6	Colombia	2.44	0.82
7	Costa Rica	14.20	6.58
8	Cuba	6.79	2.71
9	Dominican Rpb	18.56	12.01
10	Mexico	1.45	1.16
11	Panama	3.85	4.24
12	Paraguay	4.50	4.56
13	Peru	1.62	1.39
14	Uruguay	7.32	2.40
15	USA	1.21	1.24
16	Venezuela	0.53	0.37

Table 39: The Ratio2 (R2) of Central and South America

The table 39 presents the ratio 2 of Central and South American region. It can be expressed that the R2 has fluctuated over ten years. The R2 in Argentina and Chilli has dropped below 1, 1.39 to 0.92 in Argentina and 2.44 to 0.82 in Chilli. Comparing over the ten years, the ratio 2 has shown pretty similar proportions in some countries; Brazil (0.26 to 0.30), Mexico (1.45 to 1.16), Paraguay (4.50 to 4.56), Peru (1.62 to 1.39), and Venezuela (0.53 to 0.37). The Dominican Republic, as it is an island tourism destination, the R2 is extremely distinguished in this region (18.56 to 12.01).

- East Europe

Country	Tourism Investment	Domestic T. Expenditure	Ratio1 Dom. T. Expenditure/ Investment	Visitor Export	Ratio2 Visitor Export/ Investment
Developing	(US\$ bn)	(US\$ bn)		(US\$ bn)	
Countries					
Bulgaria					
2000	0.176	0.864	4.91	1.364	7.75
2010	0.631	1.126	1.78	4.502	7.13
Estonia					
2000	0.090	0.090	1.00	0.657	7.30
2010	0.246	0.393	1.60	1.448	5.89
Kazakhstan					
2000	0.451	0.308	0.68	0.403	0.89
2010	1.550	3.207	2.07	1.282	0.83
Poland					
2000	1.190	2.196	1.85	6.128	5.15
2010	3.060	5.545	1.81	10.951	3.58
Romania					
2000	0.080	0.692	8.65	0.403	5.04
2010	1.030	2.843	2.76	1.846	1.79
Ukraine					
2000	0.127	1.109	8.73	0.563	4.43
2010	0.616	3.432	5.57	4.544	7.38

Table 40: The Ratios of Domestic Expenditures and Visitor Export in East Europe

Table 40 presents the ratio of domestic expenditures and visitor exports as well as the volume of tourism investment by comparing between the years of 2000 and 2010 in the East European region. The results showed that the R2 is stronger than R1 in most countries except Ukraine and Romania. Indeed, the ratio 1 has fallen from the period of 2000 and 2010 in main countries as well. It can be noted that Kazakhstan is only one country that ratio 2 was less 1 over the ten years at 0.89 in 2000 and 0.83 in 2010.

Romania has allocated the highest amount of tourism investment in this region from 0.080 to 1.030 US\$ bn. Although, the amount of domestic and international expenditures has grown, the ratio 1 and ratio 2 has strongly declined over these ten years. Noticeably, tourism investment in Romania has sharply increased 12.8 times from 2000 to 2010, which shows that they invested heavily and unsurprisingly it affected to the declined ratio in both domestic and visitor exports.

(c) Least Developed Countries (LDCs)

- Africa

Overall, the ratio in LDC countries in Africa varies in both R1 and R2. In some countries the ratio climbed higher than 20 in 2000 and fell down to less than 5 in 2010. Nigeria is an example of this phenomenon (the ratio 1 was 26.27 in 2000 and 2.50 in 2010). In most countries, tourism investment increased dramatically during these ten years, Madagascar (0.04 to 0.23 US\$ bn), Senegal (0.03 to 0.115 US\$ bn), Sudan (0.03 to 0.41 US\$ bn), and Tanzania (0.06 to 0.69 US\$ bn) for example.

Therefore, the domestic expenditures and visitor exports of this region are positively correlated to the investment in most of the countries, with the exception of Gabon, whose visitor exports fell sharply from 1.00 US\$ bn in 2000 to 0.88 US\$ bn in 2010. However, the domestic expenditures grew by almost ten times from 0.09 to 0.20 US\$ bn. As a result, tourism investment is very low between 2000 and 2010 (0.05 to 0.07 US\$ bn).

Country	Tourism Investment (US\$ bn)	Domestic T.Expenditure (US\$ bn)	Ratio1 Dom.T. Expenditure/ Investment	Visitor Export (US\$ bn)	Ratio2 Visitor Export/ Investment
LDCs- Africa					
Benin					
2000	-	0.03		0.08	-
2010	0.1	0.13	2.10	0.16	2.62
Chad					
2000	0.02	0.01	0.50	0.02	1.00
2010	0.11	0.08	0.73	0.07	0.64
Congo					
2000	0.01	0.04	4.00	0.01	1.00
2010	0.08	0.01	0.17	0.07	0.88
Gabon					
2000	0.05	0.09	1.80	0.10	2.00
2010	0.07	0.20	2.84	0.01	0.14
Kenya					
2000	0.26	0.29	1.08	0.50	1.85
2010	0.43	1.17	2.67	1.22	2.79

Country	Tourism	Domestic	Ratio1	Visitor	Ratio2
	Investment	T.Expenditure	Dom.T. Expenditure/ Investment	Export	Visitor Export/ Investment
LDCs- Africa	(US\$ bn)	(US\$ bn)		(US\$ bn)	
Lesotho					
2000	0.01	0.02	2.00	0.02	2.00
2010	0.05	0.07	1.40	0.04	0.80
Madagascar					
2000	0.04	0.05	1.25	0.15	3.80
2010	0.23	0.12	0.50	0.54	2.31
Mauritius					
2000	0.10	0.10	1.03	0.73	7.32
2010	0.15	0.36	2.38	1.73	11.56
Mozambique					
2000	0.01	0.09	9.00	0.07	7.00
2010	0.08	0.30	3.76	0.22	2.76
Niger					
2000		0.02		0.02	
2010	0.02	0.10	5.00	0.05	2.50
Nigeria					
2000	0.06	1.57	26.27	0.18	3.10
2010	1.39	3.47	2.50	0.83	0.60
Senegal					
2000	-	0.18		0.15	
2010	0.12	0.60	5.24	0.61	5.28
Sudan					
2000	0.03	0.27	8.83	0.02	0.67
2010	0.41	1.59	3.85	0.30	0.72
Tanzania					
2000	0.06	0.19	3.17	0.38	6.35
2010	0.69	0.51	0.74	1.27	1.84

Table 41: The Ratios of Domestic Expenditures and Visitor Export in LDCs-Africa

Mauritius became one of the highest ranking countries regarding international receipts in this region, the result raised from 0.73 to 1.73 US\$ bn over ten years. Mauritius and Madagascar are the countries whose revenue is based highly on tourism (beach destinations), and therefore, the investment is also high; especially, Madagascar, where investment increased from 0.040 up to 0.234 between 2000 and 2010. In addition, Kenya and Tanzania are also unique in specific tourism (desert and safari); therefore the

international expenditures are also largely satisfactory, 0.50 to 1.22 US\$ bn in Kenya and 0.38 to 1.26 US\$ bn in Tanzania.

In contrast, domestic markets in the African region overall have moved in a positive direction. Nigeria (1.57 to 3.47 US\$ bn), Sudan (0.26 to 1.59 US\$ bn), Mozambique (0.09 to 0.30 US\$ bn) became the top three highest ranking countries in domestic expenditures.

AFRICA	Ratio1 Domestic Tourism Expenditure/ Tourism Investment		
	Country	2000	2010
1	Benin	0.00	2.10
2	Chad	0.50	0.73
3	Congo	4.00	1.71
4	Gabon	1.80	2.84
5	Ivory Cote	7.45	18.45
6	Kenya	1.08	2.67
7	Lesotho	2.00	1.40
8	Madagascar	1.25	0.50
9	Mauritius	1.03	2.38
10	Mozambique	9.00	3.76
11	Niger	0.00	5.00
12	Senegal	6.07	5.24
13	South Africa	5.28	3.46
14	Sudan	8.83	3.85
15	Tanzania	3.17	0.74

Table 42: The Ratio1 (R1) of LDCs-Africa

The ratio 1 in Africa demonstrates that in most countries, the R1 of domestic expenditures goes down from 2000 to 2010: Congo (4.00 to 1.71), Mozambique (9.00 to 3.76), Sudan (8.83 to 3.85), and Tanzania (3.17 to 0.74). In 2000, the countries that decreased investment or did not invest showed very low R1. Ivory Cotes is only one developing country in this region, and the R1 showed extremely high in 2010 which is 18.45 comparing with 7.45 in 2000.

AFRICA	Ratio2 Visitor Export/ Tourism Investment		
	Country	2000	2010
1	Benin	0.00	2.62
2	Chad	1.00	0.64
3	Congo	1.00	0.88
4	Gabon	2.00	0.14
5	Ivory Cote	0.83	2.03
6	Kenya	1.85	2.79
7	Lesotho	2.00	0.80
8	Madagascar	3.80	2.31
9	Mauritius	7.32	11.56
10	Mozambique	7.00	2.76
11	Niger	0.00	2.50
12	Senegal	5.07	5.28
13	South Africa	2.74	1.88
14	Sudan	0.67	0.72
15	Tanzania	6.35	1.84

Table 43: The Ratio2 (R2) of LDCs-Africa

Table 43 demonstrates the ratio 2 of the African region. There was an extremely low volume of tourism investment in some countries and in some cases no data was given; therefore, the R2 was 0.00 in Benin and Niger. Moreover, as for the rest of countries, the R2 was also very low in 2000, Chad and Congo are equal at 1, and Sudan was 0.67. Surprisingly, in 2010, the R2 was lowered in most of countries, except Mauritius, the ratio 2 rose from 7.32 to 11.56.

- Asia

Table 44 below represents the ratios of domestic exports and visitor exports of LDCs in Asian countries. In general, the tourism investment is allocated more in these countries. Bangladesh is ranked in the top ten countries that that have the highest populations. Unsurprisingly, the domestic expenditures increased compared to visitor exports, 1.382 to 3.692 US\$ in 2000 and 2010. Yet, the income from international receipts was weak compared with domestic markets (0.050 to 0.080).

Domestic spending declined from 0.900 to 0.241 US\$ bn in Cambodia. However, the visitor exports rose from 0.345 to 1.428 US\$ bn during the period of 2000 to 2010.

Compared to investment, it can be seen that Cambodia invested very heavily in tourism which was about 0.04 in 2000 and 0.245 US\$ bn in 2010. As a result, it can be noted that Cambodia focuses on international more than domestic tourism. The remaining countries, Lao PDR, Myanmar, and Nepal, the expenditures are quite similar in both domestic and international spending.

Country	Tourism	Domestic	Ratio1	Visitor	Ratio2
	Investment	T. Expenditure	Dom. T. Expenditure/ Investment	Export	Visitor Export/ Investment
LDCs- Asia	(US\$ bn)	(US\$ bn)		(US\$ bn)	
Countries					
Bangladesh					
2000	0.112	1.382	12.34	0.050	0.45
2010	0.413	3.692	8.94	0.080	0.19
Cambodia					
2000	0.040	0.900	22.50	0.345	8.63
2010	0.245	0.241	0.98	1.428	5.83
Lao PDR					
2000	0.020	0.040	2.00	0.117	5.85
2010	0.190	0.206	1.08	0.308	1.62
Myanmar					
2000	0.040	0.172	4.30	0.195	4.88
2010	0.104	0.980	9.42	0.070	0.67
Nepal					
2000	0.131	0.131	1.00	0.219	1.67
2010	0.134	0.311	2.32	0.415	3.10

Table 44: The Ratios of Domestic Expenditures and Visitor Export in LDCs-Asia

ASIA (LDCs)	Ratio1 Investment/ Dom. T. Expenditure		
	Country	2000	2010
1	Bangladesh	12.34	8.94
2	Cambodia	22.50	0.98
3	Lao PDR	2.00	1.08
4	Myanmar	4.30	9.42
5	Nepal	1.00	2.32

Table 45: The Ratio1 (R1) of LDCs-Asia

The R1 of Cambodia in 2000 was over 20 and also became the highest ranking of these country groups. In contrast, compared with the year 2010, the R1 declined to 0.98. In the same case of Bangladesh, the R1 came to 12.34 and jumped down to 8.94. The case of Lao, it fell slightly from 2.00 to 1.08. The R1 increased from 1.00 to 2.32 in Nepal, which indicates that the domestic tourism in Nepal will continue to grow in positive way. Myanmar is only one country in this group that R1 has increased dramatically from 4.30 to 9.42. All in all, the results of these country groups represent a fluctuation which corresponds to the tourism investment in each country.

ASIA (LDCs)	Ratio2 Investment/ Visitor Export		
	Country	2000	2010
1	Bangladesh	0.45	0.19
2	Cambodia	8.63	5.83
3	Lao PDR	5.85	1.62
4	Myanmar	4.88	0.67
5	Nepal	1.67	3.10

Table 46: The Ratio 2 (R2) of LDCs-Asia

The table above shows the visitor export's ratio of LDC countries in Asia. It can be expressed that the R2 dropped during the year of 2000 and 2010 in most countries. Only in Bangladesh did the ratio 2 stay stable (0.45 to 0.19). Nepal is only one country that R2 progressed from 1.67 to 3.10. Cambodia gradually decreased from 8.63 to 5.53, and it can be said that the R2 plummeted in Lao and Myanmar, 5.85 to 1.62 and 4.88 to 0.66 respectively.

6.3 Interpretation and Discussion

Interpretation of the data shows that tourism investment and research and development (R&D) are significant factors in terms of enhancing the tourism receipts of a country. This interpretation relates more precisely to Vernon's "Product Life Cycle" theory which has proven to be a highly demonstrative tool as to the advantages of level technology in terms of added value in product quality and product development. Moreover, the theory of Demand of Linder is also concerned in this interpretation in order to enhance each other between domestic and international tourism specialisation.

(a) Advanced Countries

Most countries in the advanced group show the ratio 1 higher than ratio 2. For example, in 2010, Australia had a ratio 1 of 3.87 and ratio 2 of 1.92; the USA had a ratio 1 (5.23) and ratio 2 (1.24) (this excludes small countries such as Luxembourg and/or low economy countries such as Greece, Ireland, and Hungary). It can be interpreted from these results that domestic tourism is as important as international tourism in those countries.

As observed in the data, France is always ranking the highest in international tourism arrivals in the world. Moreover, expenditure in domestic tourism has also risen up higher every year, which reminds us of Linder's theory on internal developments. This theory formalises domestic demand as being an important element in domestic development. The importance of the domestic market directly benefits to local actors (learning by doing) by first reinforcing the domestic development and then enabling an international expansion.

Moreover, investment in the tourism sector in France also plays a considerable role within the country since the volume invested almost doubled in ten year, as shown by the statistics in 2000 and 2010 (US\$9,36 bn and US\$15,48 bn).

The evidence shows that the data on R&D expenditures are mainly allocated in advanced country groups, and it can also be noted that these country groups are concerned with the investment (regarding technology) on research and development (R&D) which also influences the quality of tourism in the long term. In addition, adequate investment can encourage the volume of tourism spending into the country as well (see expenditures per tourist of Advanced Countries in table 47: in appendices).

The issue of the technology tourism trend is considered in tourism suppliers as well. It mentioned that in Europe marketing and technological investment is a priority for tourism suppliers. Yet, online distributors have started to participate by increasing their marketing budgets and technologies and their suppliers have refined their online strategies. They have managed to curb market shares making being carried out these past few years by online distributors. It can be seen from the number of growth of online distributors, 43% in online agency, and 57% in internet website in 2009 (Tour Hebdo Magazine, 2011¹⁴¹).

(b) Developing Countries

In general, the tourism investment on average has been allocated more in developing countries than other regions between 2000 and 2010. Thus, the ratio in both domestic and international spending has increased. Moreover, in the large population countries such as China, Brazil, India, and Indonesia, the domestic expenditures is stronger than visitor exports. Therefore, it can be concluded that a country with a high population results in a large domestic market. In contrast, in the tourism destinations, Thailand, Malaysia, Hong Kong, Macao, for example, the ratio 2 of visitor exports is higher than ratio1. Therefore, these types of country groups attract international tourists.

- Asia

In the North Asian region, it can be repeated that these countries have more potential in domestic than international markets. Additionally, in some countries, such as China and Taiwan, they are specified on industrial groups; hence the international spending is less than domestic expenditures.

South East Asian and NICS countries, Thailand, Malaysia, and Indonesia, and the new tourism destinations, Macao and Hong Kong, are primarily focused on international tourism. According to investment and R&D in tourism (refer to technology) in this region, even though, the tourism investments are essential benefits to the country, there are disadvantages to consider as well. Firstly, they have not created new technology by themselves and always depend on technology holder countries, for example, hotel chain group management. As a result, they are unable to create or produce new tourism technologies. Another point of view, there is a lack of R&D in these countries; therefore,

¹⁴¹ TOUR HEBDO., *Panorama 2011 de la distribution en France*. No. 1464-1465, 23 Septembre, 2011, pp 36-37.

the volume of foreign direct investment (FDI) in this region has a high. In contrast, there is a significant issue and difficulty in terms of dependence and competitiveness as they lack R&D investment as well as sufficient strategy and development in long term.

The international expenditures per tourist in some developing countries is high and similar to expenses in advanced countries (see expenditures per tourist of Developing Countries in table 48: in appendices). This raises the issue that some countries are not a hub for tourism destinations, so most investments are allocated to infrastructure, accessibilities for tourists (flight fare, accommodations, etc). As a result, the expenditures per tourist turn out to be quite high in these developing countries.

- Middle East and North Africa

The United Arab Emirates (UAE) is a good example country of tourism investment in the Middle East region. The profits of tourism development investment (this includes technology investment) can be enhanced in the long term thanks to the “Mega Project Development” .Therefore, this can be assumed that the UAE is one of the successful Man Made destinations by using design and technology to develop the country, as well as to import “services”, mostly from South East Asia, to enhance efficiency. For example, they recruit flight attendants of airlines direct from Thailand as they have a unique service mind.

Considerably, the UAE does not have its own tourism identity or character resources; everything is imported from other countries. Therefore, it may provoke more investment for country development. From this point of view, it can be related to HOS theory of endowment concerned with capital investment.

Another point of view of Butler Tourism Area Life Cycle, concerning the “Man Made Tourism Destination”, the UAE is might be positioned in the Development Stage of Butler’s Life Cycle. The question is how they can maintain this man-made tourism area.

Interestingly, the visitor export receipts in Israel declined over these ten years, this might be related to an increasing number of low cost airlines. For example, the convenience of direct flights from Europe can costs for international tourists.

Consequently, in North Africa, the R2 has shown more valuable than R1 as the main expenditures come from international tourists: Tunisia (2.58 and 3.68), Egypt (3.30 and 2.52), and Morocco (5.74 and 2.53) in 2000 and 2010 respectively.

As we declared that Egypt is the country that satisfies developing tourism, another interesting factor needs to be considered: the advantage of the destination. Egypt is a country with an abundance of culture and historical resources. Therefore, again, it can be linked with the theory of comparative advantage and absolute advantage. The destination country should take this advantage by utilising its proper knowhow, knowledge, as well as appropriate tourism management in order to develop and maintain the destination.

- Central and South America

The main physical features of this region are large countries by area; therefore, there are some difficulties in terms of tourism development in infrastructure and accessibility for tourists to reach attraction areas. This is a similar characteristic with other developing countries that they need to allocate in high investment budget and take time to facilitate and develop destinations in their countries.

Notably, the scale of domestic expenditures in Central and South America is very high, hence, intra-region tourism should be considered. The abundance of natural resources is absolutely unique in this region (Amazon River, etc) thus, the tourism corporations in the countries in this region also benefit by attracting more tourists to visit.

In Caribbean countries, such as the Dominican Republic and Costa Rica, we can point out that these countries are based on international tourism revenue. Therefore, the international market proves to be more effective than domestic tourism.

- East Europe

The main character of Eastern European countries they are mostly developing countries. Considerably, as this region is a neighbour with Western European countries where there are definite potential markets of tourism destinations and origin countries of technology as well as the advantage of intra region tourism or “*neighbour tourism*”. Therefore, if they are able to take this advantage in order to develop their country’s infrastructure, accessibility, and tourism product/destination management that would be profitable for their countries.

(c) Least Developed Countries (LDCs)

- Africa and Asia

In LDC countries, from the results, it can be discussed that the tourism in the intra-region of Africa is very weak for the reason of: lack of the capability of selling and purchasing power in travelling. It can be interpreted that the results of these country groups represented fluctuate which corresponds to the investment in tourism in each country as well.

Cambodia, Lao, and Myanmar are the countries where tourism investment showed to be high over the last ten years; however, the results of R1 and R2 are represented irrelevant with investment. This reflects to the difficulty of politics, policy, and development within these countries.

Significantly, as income per population is very low on average, the potential of expenses of populations in the country is also weak. As a result since there is a high volume in tourism investment (although the tourism receipts increase continuously) it obviously affects the proportion of the ratio in both domestic and international expenditures.

It clearly noted that expenditures in R&D indicate an economy's relative degree of investment in generating new knowledge. Moreover, chapter 5 illustrated the highest and lowest ranking of R&D expenditures, it declared again that the lowest countries in R&D are mainly located in LDC countries, some countries where the value of R&D is less than 1. Therefore, this fact reflects the level of tourism development in this region.

However, the theories of HOC, Comparative advantage, and/or absolute advantage can also be considered for LDC countries. As they have an advantage in tourist destinations (Africa: unique for its beach, desert, and safari; Asia: natural/cultural resources, and world heritage sites), they should take advantage by applying the technology factors concerned. Not only would this allocate physical capitals (infrastructure, construction, accessibility, etc) but it would also enable them to invest in human resources (education, training, knowhow, and knowledge). Particularly, by applying the technology factors they would be able to maintain the tourist destination (Green technology).

In conclusion, the development of international tourism specialisation, it can be said that domestic tourism is also a fundamental factor to encourage international tourism markets. Advanced country groups are cases that reflect this: domestic expenditures have more potential than visitor exports. This fact also correlates with the Theory of Demand of Linder that international tourism demand enhances an important national tourism demand. The strong domestic representative demand creates favourable conditions for the development of international tourism.

Tourism destinations can be considered to have a tourism life cycle, and similar to other industrial products, destinations are created, introduced to the market, developed and made available in competitiveness to tourists, and lastly destinations decline in attractiveness. However the tourist destination is differentiated from other industries, in that it does not disappear from the market. Therefore, it is the responsibility of tourism destination countries to maintain a dominant tourism position by adapting improved technological performances as well as involving stakeholders to take responsibility for its upkeep.

The tourism destination is the most significant factor for the country to take into account; this expression can be associated with the theory of Comparative Advantage of Ricardo and HOS (land, labour, and capital). However, it should be pointed out that the Absolute Advantage is also important of the country in terms of destination uniqueness and one of the factors to attract more tourists into the country, for example, The Eiffel Tower, Venice, Angkor Wat in Cambodia, or The Great Wall of China.

In particular, although tourism products are one kind of industrial product, it has its own unique characteristics. For that reason, tourism development of Developing and LDC countries, have their own advantages in tourism resources, unique culture to attract more tourists to visit the destinations. They can use this advantage by upgrading and adding value to their tourism products, developing the knowledge on the right way, as well as having a strong policy and capability in order to enhance the tourism competitiveness as well.

Obviously, reducing public investments in education, research and development (R&D), or the upkeep of infrastructure will clearly erode competitiveness over the medium to longer

term. R&D and education especially are among the areas that matter most for the competitiveness of advanced economies. Investments in these areas should therefore be preserved as much as possible. Another point of view, the role of university and organisation are also necessary, this means that investment in research and development (R&D) in tourism sector should be sufficient, high quality scientific research institutions should be established, and that extensive collaboration in research between universities and industry should be implemented, along with an efficient protection of intellectual property.

The term “*tourism investment*” is not only as means to invest in physical capital (infrastructure, construction, accessibility, etc) but also to invest in human resources (education, training, knowhow, and knowledge). Indeed, technology transfer benefits to maintain tourist destination in terms of “*Green technology*” as well.

In many countries, the developing tourism infrastructures and improvements are significant factors to attracting more tourism. On the technological point of view, many developing countries encourage meeting the need for tourism development, they need to invest in order to improve the quality of their tourism products, accessibility, infrastructure, means of transportation, for example. New technologies oriented towards hotels, restaurants, or attractions and internet marketing, clearly facilitate tourist access in the concerned destination. Again, we can, therefore, strongly recommend that new technologies play an essential role in attracting tourists.

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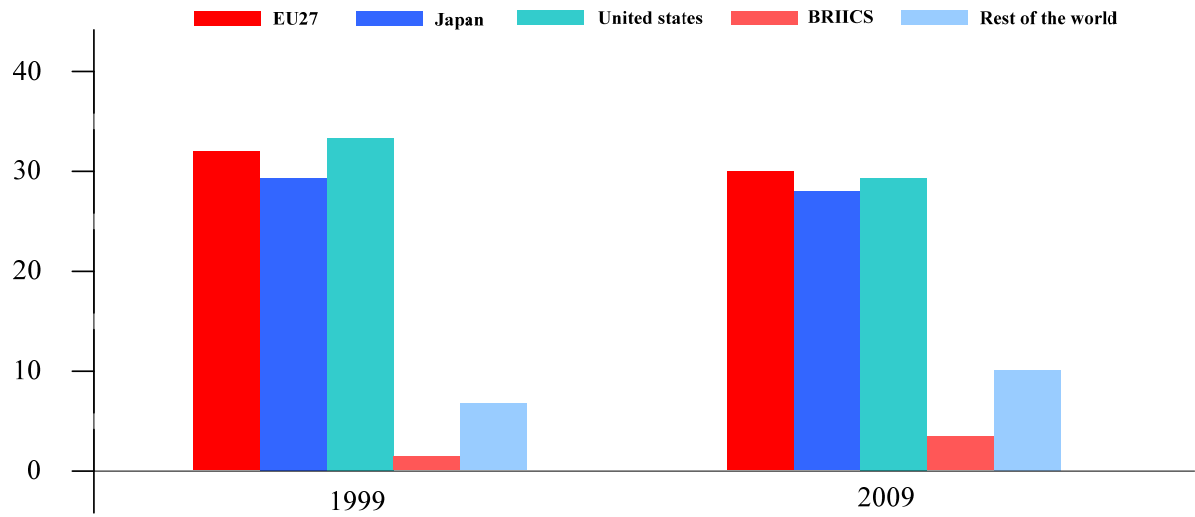
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APPENDICES

Figure 8: Triadic Patent Families by Blocs: 1999 and 2009



Source : OECD Patent Database, May 2011

Table 8: International Tourism Arrival 1990-2009, UNWTO 2010

	International Tourism Arrivals (Million)							Market Share (%)	Change (%)		Arrive arrival growth (%)
	1990	1995	2000	2005	2007	2008	2009		2009	08-07	
World	438	533	683	802	901	919	880	100	2.0	-4.2	2.9
Advanced economics¹	300	339	423	451	496	494	470	53.4	-0.4	-4.9	1.2
Emerging economics¹	139	194	260	351	405	425	410	46.6	4.9	-3.4	5.2
By UNWTO regions											
Europe	265.0	309.1	392.2	441.0	485.4	487.2	459.7	52.2	0.4	-5.7	1.8
Northern Europe	28.6	35.8	43.2	52.8	58.1	56.4	53.1	6.0	-2.9	-5.8	2.2
Western Europe	108.6	112.2	139.2	141.2	153.9	153.2	146.0	16.6	-0.4	-4.7	0.5
Central Eastern Europe	33.9	58.1	69.3	82.5	96.6	102.0	89.5	10.2	3.5	-10.4	2.9
Southern Mediter. Eu.	93.9	103.0	139.5	159.1	126.8	177.7	121.1	19.4	0.5	-3.7	2.3
Asia and the Pacific	55.8	82.0	110.1	153.6	182.0	184.0	181.2	20.6	1.1	-1.6	5.7
North-East Asia	26.4	41.3	58.3	86.0	101.0	101.0	98.1	11.1	0.0	-2.9	5.9
South-East Asia	21.2	28.4	36.1	48.5	59.2	61.7	62.1	3.1	3.4	0.6	6.2
Oceania	5.2	8.1	9.6	11.0	11.2	11.1	10.9	1.2	-0.9	-1.8	1.4
South Asia	3.2	4.2	6.1	8.1	10.1	10.3	10.1	1.1	1.1	-1.5	5.8
Americas	92.8	109.0	128.9	134.0	143.9	147.8	140.7	15.9	2.8	-4.8	1.0
North America	21.2	80.7	91.5	89.9	95.3	97.7	92.1	10.5	2.6	-5.7	0.1
Caribbean	11.4	14.0	12.1	18.8	19.8	20.1	19.5	2.2	1.2	-2.9	1.5
Central America	1.9	2.6	4.3	6.3	2.8	8.2	3.6	0.9	6.4	-7.4	6.5
South America	7.7	11.7	15.9	19.0	21.0	21.8	21.4	2.3	3.8	-1.6	3.3
Africa	14.8	18.9	26.5	35.4	43.1	44.2	45.6	5.2	2.5	3.1	6.2
North Africa	8.4	7.3	10.2	13.9	16.3	17.1	13.6	2.0	4.8	2.5	6.2
Sub-saharan Africa	6.4	11.6	16.3	21.5	26.9	27.2	28.1	3.2	1.1	3.4	6.3
Middle East	9.6	13.7	24.9	37.8	46.7	55.6	52.9	6.0	19.0	-4.9	8.8

Source: World Tourism Organization (UNWTO)

[Data as collected by UNWTO, August 2010]

Table 9: International Tourism Receipt, UNWTO 2010

	International Tourism Receipts			Share	US\$			Euro		
	Local currencies constant prices,				Receipts			Receipts		
	Change (%)			(%)	(billion)	per arrival	(billion)	per arrival		
	07/05	08/07	09/08	2009	2008	2009	2009	2008	2009	2009
World	5.5	1.3	-5.7	100	941	852	970	640	611	690
Advanced economics ¹	4.9	1.9	-6.7	64.2	613	547	1,160	417	392	830
Emerging economics ¹	6.8	0.1	-3.8	35.8	328	305	740	223	219	530
By UNWTO regions										
Europe	2.7	-1.2	-6.6	48.5	473.7	413.0	900	322.0	296.1	640
Northern Europe	4.0	-2.0	-2.9	7.1	70.2	60.9	1,150	47.8	43.6	820
Western Europe	2.2	-2.3	-7.2	16.9	162.2	143.7	980	110.3	103.0	710
Central Eastern Europe	8.9	2.1	-8.2	5.6	57.8	47.4	530	39.3	34.0	380
Southern Mediter. Eu.	0.9	-0.8	-7.0	18.9	183.5	161.1	940	124.7	115.5	670
Asia and the Pacific	10.0	4.6	-0.7	23.9	208.9	203.7	1,120	142.1	146.1	810
North-East Asia	8.3	8.4	0.7	11.8	99.9	100.3	1,020	67.9	71.9	730
South-East Asia	16.0	-1.0	-6.3	6.4	59.8	54.3	870	40.6	38.9	630
Oceania	6.4	2.9	5.2	3.9	33.7	33.5	3,080	22.9	24.0	2,210
South Asia	6.8	7.4	-0.2	1.8	15.5	15.6	1,550	10.6	11.2	1,110
Americas	6.6	4.9	-10.1	19.4	188.1	165.2	1,170	127.9	118.5	840
North America	7.6	6.9	-12.3	14.0	138.9	118.9	1,290	94.5	85.2	930
Caribbean	0.9	-3.1	-4.9	2.6	23.6	22.2	1,140	16.1	16.0	820
Central America	10.6	-1.1	-7.1	0.7	6.4	5.9	770	4.3	4.2	550
South America	6.8	2.4	-1.3	2.1	19.2	18.2	850	13.1	13.0	610
Africa	9.7	-3.5	-4.4	3.4	30.2	28.9	630	20.5	20.7	450
North Africa	7.4	-3.9	-4.3	1.2	10.8	9.9	570	7.3	7.1	410
Sub-saharan Africa	10.9	-3.3	-4.4	2.2	19.4	18.9	670	13.2	13.6	480
Middle East	9.4	0.8	-0.9	4.8	39.7	41.2	780	27.0	29.5	560

Source: World Tourism Organization (UNWTO)

[Data as collected by UNWTO, August 2010]

Table 10: International Tourist Arrival in Europe, UNWTO 2010

Major destinations	Series ₁	International Tourist Arrivals					Share (%)	International Tourism Receipts			
		(1000)			Change (%)			(US million)			Share (%)
		2007	2008	2009	08'07	09'08		2009	2007	2008	2009
Europe		485,411	487,616	460,103	0.5	-5.6	100	435,350	473,665	413,082	100
Austria	TCE	20,723	21,935	21,355	5.6	-2.6	4.6	18,695	21,587	19,404	4.7
Belgium	TCE	7,045	7,165	6,814	1.7	-4.9	1.5	10,589	11,762	9,801	2.4
Bulgaria	TF	5,151	5,780	5,739	12.2	-0.7	1.2	3,550	4,204	3,728	0.9
Croatia	TCE	9,307	9,415	9,335	1.2	-0.9	2.0	9,254	10,971	8,880	2.1
Cyprus	TF	2,416	2,404	2,141	-0.5	-10.9	0.5	2,685	2,737	2,162	0.6
Czech Rep	TCE	6,680	6,649	6,081	-0.5	-8.5	1.3	6,383	7,207	6,478	1.6
Finland	TF	3,519	3,583	3,423	1.8	-4.5	0.7	2,837	3,208	2,820	0.7
France	TF	80,853	79,218	74,200	-2.0	-6.3	16.1	54,223	56,573	49,398	12.0
Germany	TCE	24,420	24,856	24,224	1.9	-2.7	5.3	36,038	40,021	34,709	8.4
Greece	TF	16,165	15,939	14,915	-1.4	-6.4	3.2	15,513	17,114	14,506	3.5
Hungary	TF	8,638	8,814	9,058	2.0	2.8	2.0	4,721	5,935	5,631	1.4
Ireland	TF	8,332	8,026	7,189	-3.7	-10.4	1.6	6,066	6,294	4,890	1.2
Israel	TF	2,068	2,572	2,321	24.4	-9.7	0.5	3,095	4,144	3,634	0.9
Italy	TF	43,654	42,734	43,239	-2.1	1.2	9.4	42,651	45,727	40,249	9.7
Kazakhstan	TF	3,876	3,447	3,118	-11.1	-9.5	0.7	1,013	1,012	963	0.2
Netherlands	TCE	11,008	10,104	9,921	-8.2	-1.8	2.2	13,305	13,342	12,365	3.0
Norway	TF	4,377	4,347	4,346	-0.7	0.0	0.9	4,522	4,911	4,204	1.0
Poland	TF	14,975	12,960	11,890	-13.5	-8.3	2.6	10,599	11,768	9,011	2.2
Portugal	TF	12,321	-	-	-	-	-	10,145	10,943	9,650	2.3
Russian Federation	TF	20,605	21,566	19,420	4.7	-10.0	4.2	9,447	11,819	9,297	2.3
Spain	TF	58,666	57,192	52,231	-2.5	-8.7	11.4	57,645	61,628	53,127	12.9
Sweden	TCE	5,224	4,728	4,875	-9.5	3.1	1.1	11,997	12,494	12,100	2.6
Switzerland	THS	8,448	8,608	8,294	1.9	-3.7	1.8	12,181	14,408	13,945	3.4
Turkey	TF	22,248	24,994	25,506	12.3	2.0	5.5	18,487	21,951	21,250	5.1
Ukraine	TF	23,122	25,392	20,741	9.8	-18.3	4.5	4,597	5,768	3,576	0.9
United Kingdom	TF	30,871	30,142	28,033	-2.4	-7.0	6.1	38,602	36,028	30,038	7.3

Source : World Tourism Organization (UNWTO)

[Data as collected by UNWTO, August 2010]

Table 11: International Tourist Arrival in Asia, UNWTO 2010

Major destinations	Series	International Tourist Arrivals						International Tourism Receipts				
		[1000]			Change (%)		Share (%)	(US\$ million)			Share (%)	
		2,007	2,008	2,009	08'07	09'08	2009	2,007	2,008	2,009	2009	
Asia and the Pacific		182,046	184,044	181,189	1.1	-1.6	100	186,307	208,934	203,741	100	
Australia	VF	5,644	5,586	5,584	-1.0	0.0	3.1	22,308	24,756	25,594	12.6	
Cambodia	TF	1,873	2,001	2,046	6.8	2.2	1.1	1,135	1,219	1,185	0.6	
China	TF	54,720	53,049	50,875	-3.1	-4.1	28.1	37,233	40,843	39,675	19.5	
Fiji	TF	500	583	539	8.0	-7.7	0.3	497	544	-	-	
Guam	TF	1,225	1,142	1,053	-6.8	-7.8	0.6	-	-	-	-	
Hong Kong (China)	TF	17,154	17,320	16,926	1.0	-2.3	9.3	13,754	15,304	16,463	8.1	
India	TF	5,082	5,283	5,109	4.0	-3.3	2.8	10,729	11,832	11,136	5.5	
Indonesia	TF	5,506	6,234	6,324	13.2	1.4	3.5	5,346	7,375	6,318	3.1	
Iran	TF	2,219	2,034	-	-8.3	-	-	1,677	1,908	-	-	
Japan	VF	8,347	8,351	6,790	0.0	-18.7	3.7	9,334	10,821	10,305	5.1	
Korea, Republic of	VF	6,448	6,891	7,818	6.9	13.4	4.3	6,138	9,774	9,442	4.6	
Lao PDR	TF	1,142	1,295	1,239	13.4	-4.3	0.7	233	276	268	0.1	
Macao (China)	TF	12,942	10,610	10,002	-	-2.0	5.7	13,076	16,757	-	-	
Malaysia	TF	20,973	22,052	23,646	5.1	7.2	13.1	14,044	15,277	15,772	7.8	
Maldives	TF	676	683	656	1.0	-4.0	0.4	602	664	590	0.3	
New Zealand	VF	2,466	2,459	2,458	-0.3	0.0	1.4	5,436	5,012	4,398	2.2	
Nepal	TF	527	500	510	-5.0	1.9	0.3	198	336	371	0.2	
Pakistan	TF	800	823	855	-2.0	3.9	0.5	276	316	272	0.2	
Philippines	TF	3,092	3,139	3,017	1.5	-3.9	1.7	4,933	2,499	2,329	1.1	
Singapore	TF	7,957	7,778	7,488	-2.2	-3.7	4.1	9,066	10,722	9,187	4.5	
Sri Lanka	TF	494	438	448	-11.2	2.1	0.2	385	342	350	0.2	
Taiwan (Re. Of China)	VF	3,716	3,845	4,395	3.5	14.3	2.4	5,213	5,937	6,958	3.4	
Thailand	TF	14,464	14,584	14,145	0.8	-3.0	7.8	16,669	18,173	15,901	7.8	
Vietnam	VF	4,229	4,236	3,747	0.2	-11.5	2.1	3,750	3,930	3,050	1.5	

Source: World Tourism Organization (UNWTO)

[Data as collected by UNWTO, August 2010]

Table 12: International Tourist Arrival in Americas, UNWTO 2010

Major destinations	Series ¹	International Tourist Arrivals						International Tourism Receipts			
		[1000]			Change (%)		Share (%)	(US\$ million)			Share (%)
		2,007	2,008	2,009	08'07	09'08	2009.0	2,007	2,008	2,009	2009
Americas		143,852	147,830	140,679	2.8	-4.6	100.0	171,356	188,145	165,227	100
Argentina	TF	4,562	4,700	4,329	3.0	-7.9	3.1	4,314	4,616	3,916	2.4
Aruba	TF	772	827	813	7.0	-1.7	0.6	1,256	1,411	1,295	0.8
Bahamas	TF	1,528	1,463	1,327	-4.2	-9.3	0.9	2,187	2,153	1,938	1.2
Barbados	TF	575	568	519	-1.2	-8.6	0.4	1,189	1,194	1,096	0.7
Bolivia	TF	573	594	671	3.7	13.1	0.5	292	275	279	0.2
Brazil	TF	5,026	5,060	4,802	0.5	-4.9	3.4	4,953	5,785	5,305	3.2
Canada	TF	17,935	17,142	15,771	-4.4	-8.0	11.3	15,568	15,668	13,707	8.3
Chile	TF	2,507	2,699	2,750	7.7	1.9	2.0	1,478	1,674	1,568	0.9
Colombia	TF	2,115	2,168	-	2.5	-	-	1,669	1,844	1,999	1.2
Costa Rica	TF	1,980	2,089	1,923	5.5	-8.0	1.4	2,026	2,285	2,075	1.3
Cuba	TF	2,119	2,316	2,405	9.3	3.8	1.7	2,141	2,258	2,080	1.3
Dominican Republic	TF	3,980	3,980	3,992	0.0	0.3	2.8	4,064	4,166	4,065	2.5
Ecuador	VF	937	1,005	968	7.2	-3.7	0.7	623	742	663	0.4
El Salvador	TF	1,339	1,385	1,091	3.5	-21.2	0.8	482	425	319	0.2
Guatemala	TF	1,448	1,527	1,392	5.4	-8.8	1.0	1,055	1,068	820	0.5
Honduras	TF	831	899	870	8.2	-3.3	0.6	546	619	611	0.4
Jamaica	TF	1,701	1,767	1,831	3.9	3.6	1.3	1,910	1,976	1,938	1.2
Mexico	TF	21,370	22,637	21,454	5.9	-5.2	15.3	12,852	13,289	11,275	6.8
Nicaragua	TF	800	858	932	7.2	8.6	0.7	255	276	346	0.2
Panama	TF	1,103	1,247	1,200	13.0	-3.7	0.9	1,185	1,408	1,483	0.9
Paraguay	TF	416	428	439	3.0	2.6	0.3	102	109	112	0.1
Peru	TF	1,916	2,068	2,140	7.4	4.0	1.5	1,723	1,991	2,046	1.2
Puerto Rico	TF	3,687	3,716	3,551	0.8	-4.5	2.5	3,414	3,535	3,473	2.1
United States	TF	55,979	57,937	54,884	3.5	-5.3	39.2	96,896	109,976	93,917	56.8
Uruguay	TF	1,752	1,921	2,055	9.7	6.9	1.5	809	1,051	1,311	0.8
Venezuela	TF	771	744	-	-3.5	-	-	817	915	788	0.5

Source : World Tourism Organization (UNWTO)

[Data as collected by UNWTO, August 2010]

Table 13: International Tourist Arrival in Africa, UNWTO 2010

Major destinations	Series	[1000]			Change (%)		Share (%)		(US\$ million)			Share (%)
		2,007	2,008	2,009	08'07	09'08	2009	2007	2008	2009	2009	
Africa		43,250	44,340	45,711	2.5	3.1	100	29,562	30,207	28,865	100	
Algeria	VF	1,743	1,272	1,912	1.6	7.9	4.2	219	325	-	-	
Angola	TF	195	294	366	51.1	24.3	0.8	225	285	-	-	
Botswana	TF	1,455	1,500	1,553	3.1	3.5	3.4	546	553	422	1.5	
Cape Verde	TF	267	285	287	6.7	0.7	0.6	303	350	287	1.0	
Ethiopia	TF	312	330	-	5.8	-	-	176	377	-	-	
Gambia	TF	143	147	142	2.9	-3.5	0.3	84	83	-	-	
Ghana	TF	587	698	803	19.0	15.0	1.8	908	919	968	3.3	
Kenya	TF	1,686	1,141	-	-32.3	-	-	972	762	807	2.8	
Lesotho	TF	292	285	-	-2.4	-	-	46	34	-	-	
Madagascar	TF	344	375	163	8.9	-56.6	0.4	269	349	280	1.0	
Malawi	TF	735	742	-	1.0	-	-	36	43	43	0.1	
Mauritius	TF	907	930	871	2.6	-6.4	1.9	1,299	1,449	1,117	3.9	
Morocco	TF	7,408	7,879	8,341	6.4	5.9	18.3	7,162	7,168	6,556	22.7	
Mozambique	TF	771	1,915	2,386	-	22.3	5.2	163	190	196	0.7	
Namibia	TF	929	931	-	0.2	-	-	434	378	361	1.2	
Nigeria	TF	1,212	1,313	-	8.3	-	-	213	569	602	2.1	
Reunion	TF	381	396	422	4.2	6.4	0.9	401	449	-	-	
Rwanda	VF	710	731	699	3.0	-4.4	1.5	152	186	174	0.6	
Senegal	TF	875	-	-	-	-	-	531	543	-	-	
Seychelles	TF	161	159	158	-1.4	0.9	0.3	285	258	-	-	
South Africa	TF	9,091	9,592	7,012	5.5	???	15.4	8,754	7,925	7,543	26.1	
Sudan	TF	436	441	420	1.1	-4.6	0.9	262	331	299	1.0	
Swaziland	THS	870	754	909	-13.3	20.4	2.0	32	19	-	-	
Tanzania	TF	692	750	-	8.4	-	-	1,199	1,289	1,260	4.4	
Tunisia	TF	6,762	7,049	6,901	4.2	-2.1	15.1	2,575	2,953	2,773	9.6	
Uganda	TF	642	844	817	31.5	-3.2	1.8	398	498	667	2.3	
Zambia	TF	897	812	-	-9.5	-	-	138	146	-	-	
Zimbabwe	VF	2,506	1,956	2,014	-22.0	3.0	4.4	365	294	523	1.8	

Source: World Tourism Organization (UNWTO)

[Data as collected by UNWTO, August 2010]

Table 14: International Tourist Arrival in Middle East, UNWTO 2010

Major destinations		[1000]			Change (%)		Share (%)		(US\$ million)		Share (%)
	Series	2,007	2,008	2,009	08'07	09'08	2009	2007	2008	2009	2009
Middle East		46,732	55,618	52,904	19.0	-4.9	100	34,983	39,652	41,175	100
Bahrain	TF	4,935	-	-	-	-	-	1,105	1,166	-	
Egypt	TF	10,610	12,296	11,914	15.9	-3.1	22.5	9,303	10,985	10,755	
Jordan	TF	3,430	3,729	3,789	8.7	1.6	7.1	2,311	2,943	2,911	
Lebanon	TF	1,017	1,333	1,851	31.0	38.9	3.5	5,216	5,819	6,774	
Oman	TF	1,124	1,273	-	13.3	-	-	648	804	700	
Palestine	THS	264	387	396	46.6	2.2	0.7	212	269	-	
Qatar	TF	964	1,405	1,659	45.8	18.1	3.1	28	145	179	
Saudi Arabia	TF	11,531	14,757	10,896	28.0	-26.2	20.6	5,968	5,910	5,964	
Syrian Arab Republic	TF	4,158	5,430	6,092	30.6	12.2	11.5	2,884	3,150	-	
United Arab Emirates	THS	-	-	-	-	-	-	6,072	7,162	7,352	
Yemen	THS	379	404	434	6.6	7.3	0.8	425	453	496	

Source: World Tourism Organization (UNWTO)

[Data as collected by UNWTO, August 2010]

Table 17: World Tourism Economic Growth from 2001 to 2011

World	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Travel & Tourism Direct Contribution to GDP											
LCU (local currency units) bn											
US\$ bn	1062.34	1070.94	1167.6	1308.5	1377.9	1471.7	1647	1755.23	1641.27	1757.5	1850
2011 US\$ bn	1619.79	1615.64	1612.9	1678.1	1692.3	1732.3	1787.9	1763.93	1711.85	1768.8	1850
Real growth (%)	0.2	-0.6	-0.5	3.5	0.4	2.4	2.8	-1.5	-3.4	3.2	4.4
% share	3.2	3.2	3.1	3.1	3	2.9	2.9	2.8	2.8	2.8	2.8
Travel & Tourism Total Contribution to GDP											
LCU (local currency units) bn											
US\$ bn	3218.14	3230.6	3558.7	4079.1	4415.4	4768.2	5366.9	5807.13	5408.68	5702	5987.4
2011 US\$ bn	4957.54	4910.29	4935.9	5231.5	5424.2	5618.8	5853.5	5852.7	5652.89	5755	5991.9
Real growth (%)	0.2	-1.2	0.1	5.7	3.3	3.6	3.6	0	-3.9	1.7	3.8
% share	9.9	9.6	9.4	9.6	9.6	9.6	9.6	9.4	9.3	9	9.1
Travel & Tourism Direct Contribution to Employment											
Real growth (%)	-3.1	2.7	2.1	4.4	1.1	3.3	-0.6	-0.2	-2.3	0.9	3
% share	3.3	3.4	3.4	3.5	3.5	3.5	3.4	3.4	3.3	3.3	3.3
'000	85904.6	88287.8	90203	94246	95307	98474	97794	97527.6	95260.1	96131	99048
Travel & Tourism Total Contribution to Employment											
Real growth (%)	-3.1	1.5	1.4	5.1	0.6	2.7	3.1	-4	-3.1	-0.8	3.2
% share	9.2	9.2	9.2	9.5	9.4	9.5	9.6	9.1	8.8	8.6	8.7
'000	235376	238949	242348	254790	256508	263553	271805	260838	252720	250565	258592
Visitor Exports											

LCU (local currency units) bn											
US\$ bn	562.922	587.574	650.51	771.64	836.62	910.08	1048.4	1159.24	1032.79	1101	1166.1
2011 US\$ bn	922.289	926.072	912.11	991.77	1022.2	1064.1	1114.4	1140.31	1067.83	1102.4	1162.7
Real growth (%)	-0.2	-0.1	-1.3	8.1	3.2	4	4.6	2.5	-6.5	3.2	5.5
% share	7.2	7.2	6.8	6.7	6.4	6.1	6	5.8	6.5	5.9	5.7
Domestic Travel & Tourism Spending											
LCU (local currency units) bn											
US\$ bn	1512.11	1495.44	1648	1837.9	1970	2119.9	2335.1	2483.76	2326.74	2506.5	2636.6
2011 US\$ bn	2277.79	2245.63	2275.3	2357.3	2420.3	2499.4	2555.9	2527.67	2441.93	2533	2636.6
Real growth (%)	-1.5	-1.8	0.7	3.3	2.4	3.4	1.8	-1.2	-4.1	3.5	3.8
% share	4.6	4.4	4.3	4.3	4.3	4.2	4.1	4	4	3.9	4
Government Individual Travel & Tourism Spending											
LCU (local currency units) bn											
US\$ bn	10.712	7.45	23.872	35.577	38.281	40.924	45.84	51.358	52.067	55.158	56.814
2011 US\$ bn	17.23	12.833	32.865	44.453	46.149	47.725	49.724	51.867	54.03	55.487	56.795
Real growth (%)	-52.3	-29.7	186.7	37.5	3.5	3.1	3.9	4.2	3.7	2.5	2
% share											
Internal Travel & Tourism Consumption											
LCU (local currency units) bn											
US\$ bn	2088.64	2093.42	2326.8	2650.7	2844.9	3070.7	3429.1	3694.34	3411.59	3662.6	3859.5
2011 US\$ bn	3219.44	3185.87	3221.7	3395.3	3490.4	3613	3722.1	3722.5	3566.39	3693.3	3858.2
Real growth (%)											
% share	5.2	5	4.9	4.9	4.8	4.7	4.7	4.5	4.6	4.5	4.5
Leisure Travel & Tourism Spending											

LCU (local currency units) bn											
US\$ bn	1547.37	1559.82	1763.8	2007	2134.3	2279.5	2554.5	2783.89	2632.16	2826.7	2962.6
2011 US\$ bn	2390.35	2388.7	2458.7	2585.2	2624.5	2683.9	2768.5	2800.41	2750.55	2848.7	2962.6
Real growth (%)	-1.9	-0.5	2.5	4.8	1.3	2.3	2.8	1	-2.2	3.4	3.8
% share	2.4	2.3	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1
Business Travel & Tourism Spending											
LCU (local currency units) bn											
US\$ bn	538.692	530.711	558.51	638.83	710.4	791.05	874.85	909.398	779.98	837.93	898.97
2011 US\$ bn	832.325	799.913	765.12	813.19	867.77	931.01	955.55	921.939	816.778	847.23	898.97
Real growth (%)	-1	-4.4	-4.4	5.9	6.7	7.3	2.4	-3.2	-12.1	3.8	6
% share	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6
Capital Investment											
LCU (local currency units) bn											
US\$ bn	299.394	289.335	306.58	394.4	463.5	524.72	627.22	710.066	620.344	611.7	652.43
2011 US\$ bn	457.207	439.402	430.47	508.49	575.92	626.42	699.04	726.648	656.776	619.65	650.76
Real growth (%)	5.6	-4.5	-3.1	18.6	11.7	8.2	10	3.7	-10.3	-5.6	4.6
% share	4.3	4.1	3.9	4.4	4.6	4.7	4.9	5	4.8	4.5	4.4

Source: WTTC, 2011

Table 18: International Tourism Expenditure, UNWTO 2010

Rank	International Tourism Expenditure (US\$ billion)		Local currencies change (%)		Market share (%)	Population 2008	Expenditure Per capita
	2008	2009	08'07	09'08	2009	(million)	(US\$)
World	941	852			100	6,792	125
1. Germany	91.0	81.2	2.0	-5.9	9.5	82	989
2. United States	79.7	73.2	4.4	-8.1	8.6	307	238
3. United Kingdom	68.5	50.3	4.4	-13.3	5.9	62	814
4. China	36.2	43.7	21.4	20.9 (\$)	5.1	1.335	33
5. France	41.4	38.5	0.8	-1.9	4.5	63	615
6. Italy	30.8	27.9	4.9	-4.3	3.3	60	467
7. Japan	27.9	25.1	-7.6	-18.4	3.0	128	197
8. Canada	27.2	24.2	9.4	-4.8	2.8	34	317
9. Russian Federation	23.8	20.8	12.1	-12.7(\$)	2.4	141	147
10. Netherlands	21.7	20.7	6.2	0.4	2.4	16	1,255

*Source: World Tourism Organization (UNWTO) [Data as collected by UNWTO, August 2010]
(\$) = percentage derived from series in US\$ instead of of local currency.*

Table 19: The Top Ten Hotel Chain Groups in the World, 2011 (Les dix premières groupes hôteliers du monde, en 2011)

Ranking	Hotel Chain Groups	No. of hotel	No. of room	Percentage increasing (%)
1	IHG	4437	647161	+0.5
2	WYNDHAM	7207	612735	+2.5
3	Hilton	3689	605938	+3.1
4	Marriott	3446	602056	+3.6
5	Accor	4229	506608	+2.8
6	Choice	6142	495145	+1.6
7	Starwood	1041	308700	+5.9
8	Best Western	4015	307155	+0.4
9	Carlson	1078	165061	+3.3
10	Hyatt	435	127507	+4.3

Source: Base de données MKG Hospitalité, juin 2011

Table 20: Airport Infrastructure Gross Investment Spending (Million Euros)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Australia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Austria	96	82	81	102	158	240	362	217	217	n.a.	n.a.
Azerbaijan	36	10	4	1	28	9	94	96	71	83	27
Belgium	125	127	127	73	69	47	68	88	135	116	93
Bosnia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Bulgaria	5	6	1	4	3	3	2	2	2	4	1
Canada	n.a.	777	1,243	1,153	1,008	777	786	829	740	815	731
Croatia	18	5	7	9	31	12	19	24	20	21	28
Czech Republic	17	28	50	39	52	151	237	71	77	311	94
Denmark	135	118	62	106	19	27	35	37	64	28	n.a.
Finland	97	65	63	51	43	48	48	60	74	108	76
France	628	783	821	951	837	838	860	978	1,052	820	739
Germany	1,314	1,411	1,329	1,010	1,130	540	700	720	1,620	1,140	1,510
Greece	n.a.	52	51	64	91	94	68	52	34	n.a.	n.a.
Hungary	18	27	17	47	46	20	115	9	2	0	11
Iceland	6	12	10	5	4	3	7	5	5	12	5
India	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	n.a.	n.a.	107	75	48	80	105	147	271	403	509
Italy	387	355	415	558	386	307	806	234	124	126	n.a.
Japan	2,029	2,798	2,571	2,179	2,005	2,028	2,151	2,550	2,278	2,262	2,538
Korea	n.a.	n.a.	3	3	3	3	3	3	3	1	0
Latvia	n.a.	18	25	12	5	5	17	20	17	19	3
Lithuania	2	1	1	1	5	3	4	18	53	11	29
Malta	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Mexico	175	185	156	163	85	157	650	331	178	275	179
Moldova	1	8	2	2	1	1	1	2	4	12	4
Montenegro	0	13	14	0	0	4	3	1	4	0	2
Netherlands	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
New Zealand	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Norway	72	72	0	111	76	104	21	154	238	205	n.a.
Poland	45	69	89	58	38	49	131	133	85	79	63
Portugal	135	168	182	125	99	184	144	107	93	146	153
Romania	3	7	7	14	3	2	2	15	42	9	6
Russia	131	240	243	498	576	684	268	398	436	441	269
Serbia	0	0	0	0	1	1	0	1	0	0	1
Slovakia	5	4	4	3	6	11	32	14	16	30	56
Slovenia	6	3	2	1	2	3	1	11	24	5	13
Spain	421	460	872	1,220	2,030	1,874	1,343	1,425	1,988	2,121	1,763
Sweden	199	315	348	227	149	81	85	88	118	108	88
Switzerland	193	411	500	422	250	159	104	n.a.	n.a.	n.a.	n.a.
Turkey	2,457	217	147	166	145	160	381	503	124	125	n.a.
United Kingdom	1,022	1,196	1,105	1,358	2,085	2,203	2,601	n.a.	n.a.	n.a.	n.a.
United States	10,904	13,212	15,048	14,090	11,328	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Table 22: International Tourist Arrival to Thailand By Nationality at Suvarnaphum Airport, June 2011

Nationality	2011		2010		%Δ
	Number	%Share	Number	%Share	2011/2010
East Asia	475,908	49.35	232,253	39.60	104.91
ASEAN	164,336	17.04	85,322	14.55	92.61
Brunei	711	0.07	391	0.07	81.84
Cambodia	2,716	0.28	2,001	0.34	35.73
Indonesia	23,105	2.40	7,789	1.33	196.64
Laos	1,715	0.18	1,438	0.25	19.26
Malaysia	41,984	4.35	22,357	3.81	87.79
Myanmar	8,558	0.89	5,814	0.99	47.20
Philippines	14,083	1.46	9,618	1.64	46.42
Singapore	41,614	4.32	25,117	4.28	65.68
Vietnam	29,850	3.10	10,797	1.84	176.47
China	96,378	9.99	38,070	6.49	153.16
Hong Kong	37,673	3.91	17,953	3.06	109.84
Japan	76,566	7.94	47,615	8.12	60.80
Korea	54,139	5.61	27,683	4.72	95.57
Taiwan	43,261	4.49	14,300	2.44	202.52
Others	3,555	0.37	1,310	0.22	171.37
Europe	206,174	21.38	162,412	27.69	26.95
Austria	3,202	0.33	2,592	0.44	23.53
Belgium	3,816	0.40	3,400	0.58	12.24
Denmark	7,068	0.73	7,054	1.20	0.20
Finland	3,538	0.37	3,816	0.65	-7.29
France	21,189	2.20	16,142	2.75	31.27
Germany	26,917	2.79	20,935	3.57	28.57
Ireland	4,539	0.47	4,362	0.74	4.06
Italy	7,472	0.77	4,999	0.85	49.47
Netherlands	9,857	1.02	8,310	1.42	18.62
Norway	9,073	0.94	8,506	1.45	6.67
Russia	26,191	2.72	11,318	1.93	131.41
Spain	6,006	0.62	2,773	0.47	116.59
Sweden	11,765	1.22	11,175	1.91	5.28
Switzerland	6,055	0.63	5,595	0.95	8.22
United Kingdom	46,023	4.77	41,527	7.08	10.83
East Europe	7,852	0.81	5,912	1.01	32.81
Others	5,611	0.58	3,996	0.68	40.42

Nationality	2011		2010		%Δ
	Number	%Share	Number	%Share	2011/2010
The Americas	58,753	6.09	40,676	6.93	44.44
Argentina	419	0.04	325	0.06	28.92
Brazil	1,213	0.13	822	0.14	47.57
Canada	9,658	1.00	6,187	1.05	56.10
USA	45,043	4.67	31,714	5.41	42.03
Others	2,420	0.25	1,628	0.28	48.65
South Asia	106,090	11.00	72,196	12.31	46.95
Bangladesh	5,976	0.62	4,134	0.70	44.56
India	85,824	8.90	56,294	9.60	52.46
Nepal	1,858	0.19	1,669	0.28	11.32
Pakistan	6,489	0.67	5,340	0.91	21.52
Sri Lanka	3,666	0.38	2,829	0.48	29.59
Others	2,277	0.24	1,930	0.33	17.98
Oceania	46,832	4.86	34,549	5.89	35.55
Australia	40,265	4.18	29,222	4.98	37.79
New Zealand	6,410	0.66	5,191	0.89	23.48
Others	157	0.02	136	0.02	15.44
Middle East	61,616	6.39	37,884	6.46	62.64
Egypt	1,503	0.16	988	0.17	52.13
Israel	4,729	0.49	4,043	0.69	16.97
Kuwait	7,340	0.76	3,521	0.60	108.46
Saudi Arabia	1,632	0.17	504	0.09	223.81
U.A.E.	16,060	1.67	10,103	1.72	58.96
Others	30,352	3.15	18,725	3.19	62.09
Africa	8,992	0.93	6,565	1.12	36.97
S.Africa	3,822	0.40	2,428	0.41	57.41
Others	5,170	0.54	4,137	0.71	24.97
Grand Total	964,365	100.00	586,535	100.00	64.42

Source: Immigration Office, Police Department, Ministry of Tourism and Sports Thailand

Table 23 : Thailand Tourism Receipts from International Tourist Arrival: January-December 2010

Country of Residence	No. of Arrivals		Length of Stay		Per Capita Spending				Tourism Receipts			
	No.	+/- (%)	(Days)	+/-	Baht/Day	+/- (%)	US\$/Day	+/- (%)	Mil. Baht	+/- (%)	Mil. US\$	+/- (%)
East Asia	8,304,478	+ 14.29	5.90	+ 0.22	4,243.61	+ 2.00	133.91	+ 10.37	207,921.65	+ 21.09	6,561.11	+ 31.03
Asean	4,595,893	+ 12.79	5.28	+ 0.13	4,019.44	+ 2.08	126.84	+ 10.46	97,537.17	+ 18.05	3,077.85	+ 27.73
Brunei	8,906	- 15.32	5.52	+ 0.55	4,668.12	+ 0.86	147.31	+ 9.13	229.49	- 5.14	7.24	+ 2.55
Cambodia	150,011	+ 45.40	7.21	- 0.95	3,675.23	+ 0.43	115.97	+ 8.67	3,975.06	+ 29.03	125.44	+ 39.63
Indonesia	285,666	+ 26.12	5.76	+ 0.73	4,357.20	- 0.93	137.49	+ 7.20	7,169.50	+ 43.08	226.24	+ 54.82
Laos	718,377	+ 9.23	5.59	+ 0.21	3,087.12	+ 2.27	97.42	+ 10.65	12,397.02	+ 16.07	391.20	+ 25.59
Malaysia	2,047,175	+ 17.09	4.56	+ 0.07	4,080.33	+ 2.12	128.76	+ 10.50	38,090.25	+ 21.44	1,201.96	+ 31.40
Myanmar	91,111	+ 13.79	7.52	+ 0.80	3,779.45	- 0.71	119.26	+ 7.43	2,589.51	+ 26.43	81.71	+ 36.80
Philippines	242,859	+ 12.88	7.36	- 0.27	4,191.11	+ 3.27	132.25	+ 11.74	7,491.37	+ 12.45	236.40	+ 21.67
Singapore	654,342	+ 0.44	5.36	+ 0.24	4,816.85	+ 3.20	152.00	+ 11.67	16,894.03	+ 8.52	533.10	+ 17.42
Vietnam	397,446	+ 4.10	5.44	+ 0.10	4,024.28	+ 3.00	126.99	+ 11.45	8,700.94	+ 9.23	274.56	+ 18.19
China	1,132,267	+ 38.81	6.86	+ 0.34	4,424.56	+ 1.66	139.62	+ 10.00	34,367.10	+ 48.47	1,084.48	+ 60.65
Hong Kong	391,067	+ 3.20	5.46	+ 0.15	4,820.14	+ 2.40	152.10	+ 10.80	10,292.10	+ 8.66	324.77	+ 17.58
Japan	980,424	- 0.22	7.22	+ 0.53	4,417.07	+ 0.46	139.38	+ 8.70	31,266.86	+ 8.17	986.65	+ 17.05
Korea	805,179	+ 29.72	6.70	+ 0.09	4,564.43	+ 2.53	144.03	+ 10.94	24,623.79	+ 34.81	777.02	+ 45.87
Taiwan	371,285	+ 1.25	5.91	+ 0.08	4,174.77	+ 2.74	131.74	+ 11.16	9,160.65	+ 5.44	289.07	+ 14.09
Others	28,363	+ 7.07	5.55	+ 0.08	4,281.56	+ 2.73	135.11	+ 11.17	673.98	+ 11.61	21.27	+ 20.78
Europe	4,329,583	+ 10.45	14.54	+ 0.30	3,735.57	+ 0.96	117.88	+ 9.25	235,162.23	+ 13.86	7,420.71	+ 23.20
Austria	88,788	+ 1.51	13.59	+ 0.58	3,874.73	+ 0.87	122.27	+ 9.15	4,675.37	+ 6.96	147.53	+ 15.73
Belgium	80,246	- 1.56	14.20	+ 0.45	3,515.46	+ 1.81	110.93	+ 10.16	4,005.84	+ 3.50	126.41	+ 12.00
Denmark	150,300	+ 4.87	13.38	+ 0.94	4,062.50	+ 3.47	128.20	+ 11.96	8,169.72	+ 16.70	257.80	+ 26.27
Finland	145,510	- 6.47	13.64	+ 1.61	4,019.82	+ 3.00	126.85	+ 11.46	7,978.37	+ 9.23	251.76	+ 18.19
France	439,773	+ 9.59	14.80	+ 0.42	3,558.21	- 2.06	112.28	+ 5.97	23,159.24	+ 10.47	730.81	+ 19.54
Germany	596,960	+ 7.20	15.30	- 0.14	3,474.36	+ 0.58	109.64	+ 8.83	31,733.02	+ 6.85	1,001.36	+ 15.61
Italy	161,086	- 1.98	14.61	- 0.21	3,561.51	+ 0.61	112.39	+ 8.87	8,381.89	- 2.78	264.50	+ 5.20
Netherlands	190,539	- 6.45	14.20	- 0.11	3,904.72	- 0.54	123.22	+ 7.63	10,564.82	- 7.67	333.38	- 0.09
Norway	132,865	+ 10.11	13.50	- 0.37	3,877.75	+ 1.68	122.37	+ 10.03	6,955.44	+ 8.97	219.48	+ 17.90
Russia	643,839	+ 92.24	12.01	+ 0.56	4,242.05	+ 0.51	133.86	+ 8.76	32,801.66	+ 102.67	1,035.08	+ 119.30
Spain	69,223	- 10.29	13.20	+ 0.17	3,705.70	- 2.10	116.94	+ 5.94	3,386.06	- 11.02	106.85	- 3.72
Sweden	348,640	+ 2.43	17.55	+ 0.69	3,525.29	+ 2.32	111.24	+ 10.72	21,569.97	+ 9.10	680.66	+ 18.05
Switzerland	165,582	+ 5.52	14.81	+ 0.72	3,690.18	- 1.64	116.45	+ 6.42	9,049.33	+ 9.09	285.56	+ 18.04
United Kingdom	760,249	- 2.20	15.99	+ 0.89	3,630.97	- 0.75	114.58	+ 7.40	44,139.40	+ 2.80	1,392.85	+ 11.23
East Europe	203,540	+ 19.99	12.58	+ 0.92	3,887.11	- 2.44	122.66	+ 5.57	9,953.06	+ 26.30	314.08	+ 36.66
Others	152,443	+ 2.32	14.23	+ 0.72	3,982.49	+ 0.16	125.67	+ 8.37	8,639.04	+ 7.95	272.61	+ 16.80

The Americas	792,190	- 0.37	13.45	- 0.07	4,298.08	- 1.06	135.63	+ 7.06	45,795.83	- 1.94	1,445.12	+ 6.11
Argentina	9,336	+ 44.70	10.93	+ 0.67	4,195.01	- 1.74	132.38	+ 6.33	428.07	+ 51.47	13.51	+ 63.96
Brazil	16,753	+ 20.61	10.56	- 0.44	4,323.30	- 0.33	136.42	+ 7.84	764.84	+ 15.41	24.14	+ 24.88
Canada	148,287	+ 0.74	14.91	+ 0.18	4,101.13	- 1.16	129.41	+ 6.94	9,067.42	+ 0.79	286.13	+ 9.06
USA	586,508	- 2.16	13.32	- 0.10	4,380.23	- 0.85	138.22	+ 7.28	34,219.65	- 3.72	1,079.82	+ 4.18
Others	31,306	+ 11.40	11.21	- 0.15	3,749.50	- 1.63	118.32	+ 6.44	1,315.85	+ 8.13	41.52	+ 16.99
South Asia	985,098	+ 21.72	6.24	+ 0.10	4,596.85	+ 4.41	145.06	+ 12.98	28,256.92	+ 29.15	891.67	+ 39.75
Bangladesh	70,598	+ 26.48	6.21	+ 0.57	4,208.43	+ 1.98	132.80	+ 10.35	1,845.03	+ 42.02	58.22	+ 53.66
India	746,214	+ 25.09	6.16	+ 0.09	4,751.84	+ 4.49	149.95	+ 13.07	21,842.64	+ 32.65	689.26	+ 43.53
Nepal	29,994	+ 12.41	7.28	- 0.24	3,779.11	- 0.07	119.25	+ 8.12	825.19	+ 8.74	26.04	+ 17.67
Pakistan	64,091	+ 2.52	6.75	+ 0.03	4,009.18	+ 5.09	126.51	+ 13.71	1,734.43	+ 8.22	54.73	+ 17.09
Sri Lanka	49,827	+ 9.65	6.34	+ 0.29	4,464.18	+ 2.50	140.87	+ 10.91	1,410.25	+ 17.78	44.50	+ 27.43
Others	24,374	+ 9.25	6.11	- 0.12	4,024.71	+ 0.97	127.00	+ 9.25	599.38	+ 8.19	18.91	+ 17.02
Oceania	788,229	+ 8.21	11.79	+ 0.55	4,589.96	+ 3.23	144.84	+ 11.71	42,655.47	+ 17.18	1,346.02	+ 26.79
Australia	702,921	+ 8.89	11.80	+ 0.52	4,669.89	+ 3.39	147.36	+ 11.87	38,734.33	+ 17.77	1,222.29	+ 27.44
New Zealand	79,660	+ 1.79	11.82	+ 0.81	3,936.65	+ 1.49	124.22	+ 9.81	3,706.67	+ 10.91	116.97	+ 20.02
Others	5,648	+ 22.52	10.62	+ 0.23	3,575.58	+ 0.27	112.83	+ 8.49	214.47	+ 25.56	6.77	+ 35.94
Middle East	615,006	+ 17.51	9.98	+ 0.04	4,533.36	+ 3.16	143.05	+ 11.62	27,824.69	+ 21.71	878.03	+ 31.70
Egypt	15,215	+ 13.60	8.02	+ 0.17	4,325.86	+ 2.27	136.51	+ 10.67	527.86	+ 18.69	16.66	+ 28.45
Israel	115,961	+ 4.24	13.64	+ 0.21	3,925.81	+ 3.14	123.88	+ 11.59	6,209.49	+ 9.19	195.94	+ 18.15
Kuwait	45,223	- 4.02	8.86	+ 0.00	4,743.96	- 0.57	149.70	+ 7.59	1,900.79	- 4.56	59.98	+ 3.27
Saudi Arabia	13,031	- 10.97	9.03	+ 0.08	5,020.22	+ 0.15	158.42	+ 8.37	590.73	- 10.04	18.64	- 2.66
U.A.E.	140,884	+ 17.94	9.47	+ 0.30	5,124.18	+ 1.42	161.70	+ 9.75	6,836.56	+ 23.53	215.73	+ 33.67
Others	284,692	+ 30.89	9.07	+ 0.05	4,554.04	+ 4.53	143.71	+ 13.11	11,759.26	+ 37.58	371.07	+ 48.87
Africa	121,816	+ 12.96	9.27	+ 0.63	4,584.78	+ 2.38	144.68	+ 10.79	5,177.30	+ 24.09	163.37	+ 34.26
South Africa	55,467	+ 37.07	9.82	+ 0.58	4,860.83	+ 1.75	153.39	+ 10.11	2,647.62	+ 48.23	83.55	+ 60.40
Others	66,349	- 1.52	8.80	+ 0.53	4,332.61	+ 1.17	136.72	+ 9.46	2,529.68	+ 6.02	79.83	+ 14.71
Grand Total	15,936,400	+ 12.63	9.12	+ 0.13	4,078.67	+ 1.68	128.71	+ 10.03	592,794.09	+ 16.18	18,706.03	+ 25.71
Note: Exchange rate 1 US\$ = 31.69 Baht									82,539.04			

Table 47: Tourist's Expenditures per person/year in Advanced Countries (2000 and 2010)

Country	Tourism Investment	Expenditure on R&D	Domestic Expenditure	Number of population	Expenditure per population	Visitor Export	Number of tourists	Expenditure per Tourist
Advanced Countries	US\$ bn	(%)	US\$ bn		US\$	US\$ bn		US\$
Australia								
2000	4.678	1.32	32.509	19,000,000	1,711.00	13.016	4,946,000	2631.62
2010	18.746	1.94	72.570	22,783,722	3,185.17	35.902	5,885,000	6100.59
Austria								
2000	2.784	0.65	9.490	8,189,000	1,158.87	11.382	17,982,000	632.97
2010	3.725	0.92	12.486	8,419,776	1,482.94	21.130	22,004,000	960.28
Belgium								
2000	1.885	0.8	8.679	10,419,000	833.00	8.284	6,457,000	1282.95
2010	2.161	0.8	8.025	10,839,905	740.32	10.559	7,217,000	1463.07
Canada								
2000	4.010	0.38	24.197	31,689,000	763.58	13.035	20,423,000	638.25
2010	9.685	2.51	34.970	34,482,779	1,014.13	18.903	16,095,000	1174.46
Czech Rep								
2000	0.920	0.31	4.495	10,220,000	439.82	2.973	5,700,000	521.58
2010	1.770	0.41	4.490	10,542,080	425.91	7.110	6,334,000	1,122.51
Denmark								
2000	2.260	0.47	6.680	5,431,000	1,229.98	3.990	2,088,000	1,910.92
2010	2.150	0.64	8.300	5,579,204	1,487.67	6.990	9,097,000	768.39
France								
2000	9.369	4.97	91.655	58,921,000	1,555.56	36.364	75,500,000	481.64
2010	15.488	4.97	135.921	65,027,000	2,090.22	53.878	76,800,000	701.54
Germany								
2000	12.621	7.27	76.014	82,000,000	927.00	24.940	18,983,000	1,313.81
2010	18.664	8.48	74.607	81,729,000	912.86	47.429	26,875,000	1,764.80

Table 47: (cont.)

Country	Tourism Investment	Expenditure on R&D	Domestic Expenditure	Number of population	Expenditure per population	Visitor Export	Number of tourists	Expenditure per Tourist
	US\$ bn	(%)	US\$ bn		US\$	US\$ bn		US\$
Advanced Countries								
Greece								
2000	3.505	0.21	3.747	11,120,000.00	336.96	8.746	12,500,000.00	699.68
2010	7.473	0.21	14.667	10,787,690.00	1,359.61	14.156	15,007,000.00	943.29
Hungary								
2000	0.640	0.12	1.575	10,098,000.00	155.97	3.809	15,571,000.00	244.62
2010	0.920	0.21	3.678	9,985,722.00	368.33	7.723	9,510,000.00	812.09
Ireland								
2000	1.556		2.833	4,148,000.00	682.98	3.517	6,728,000.00	522.74
2010	2.954	0.29	1.182	4,581,269.00	258.01	7.601	7,189,000.00	1,057.31
Italy								
2000	7.524	2.23	59.289	57,620,000.00	1,028.97	28.706	41,182,000.00	697.05
2010	14.718	2.54	77.893	60,705,991.00	1,283.12	42.049	43,626,000.00	963.85
Japan								
2000	22.982	14	194.894	127,000,000.00	1,534.60	5.970	4,757,000.00	1,254.99
2010	33.870	15.4	215.945	127,720,000.00	1,690.77	13.468	8,611,000.00	1,564.05
Luxembourg								
2000	0.106	0.07	0.337	465,000.00	724.73	0.828	807,000.00	1,026.02
2010	0.313	0.07	1.231	511,840.00	2,405.05	1.421	none	
Netherlands								
2000	2.995	1.43	22.580	16,299,000.00	1,385.36	11.285	10,200,000.00	1,106.37
2010	4.255	1.29	23.007	16,715,489.00	1,376.39	18.867	10,883,000.00	1,733.62
New Zealand								
2000	0.558	0.13	3.747	4,028,000.00	1,294.94	2.835	1,787,000.00	1,586.46
2010	1.466	0.16	14.667	4,431,000.00	2,432.86	5.474	2,525,000.00	2,167.92

Table 47: (cont.)

Country	Tourism Investment	Expenditure on R&D	Domestic Expenditure	Number of population	Expenditure per population	Visitor Export	Number of tourists	Expenditure per Tourist
Advanced Countries	US\$ bn	(%)	US\$ bn		US\$	US\$ bn		US\$
Portugal								
2000	1.544	0.17	5.364	10,495,000.00	511.10	6.027	12,037,000.00	500.71
2010	3.429	0.41	8.403	10,555,853.00	796.05	12.935	6,865,000.00	1,884.20
Russia								
2000	1.250	2.49	8.308	147,000,000.00	56.52	3.429	21,169,000.00	161.98
2010	6.970	3.11	47.040	142,914,136.00	329.15	13.775	20,271,000.00	679.54
Spain								
2000	7.065	1.43	37.285	43,064,000.00	865.80	32.656	48,201,000.00	677.50
2010	16.552	2.12	74.495	46,162,024.00	1,613.77	57.881	52,677,000.00	1,098.79
South Africa								
2000	1.220		6.445	45,000,000.00	143.22	3.338	6,001,000.00	556.24
2010	5.550		19.192	50,586,757.00	379.39	10.452	8,074,000.00	1,294.53
South Korea								
2000	4.210	4.07	19.398	47,817,000.00	405.67	8.527	5,322,000.00	1,602.22
2010	6.370	4.55	30.920	48,219,000.00	641.24	13.556	8,798,000.00	1,540.80
Sweden								
2000	0.915	1.39	5.728	9,041,000.00	633.56	4.825	2,746,000.00	1,757.10
2010	2.166	1.39	6.478	9,471,174.00	683.97	12.456	4,951,000.00	2,515.86
UK								
2000	8.599	4.15	75.462	58,459,000.00	1,290.85	29.980	25,191,000.00	1,190.11
2010	13.233	4.15	82.210	62,300,000.00	1,319.58	38.846	28,133,000.00	1,380.80
United States								
2000	98.343	38.29	491.768	281,421,906.00	1,747.44	118.630	50,891,000.00	2,331.06
2010	128.684	41.24	673.200	312,731,000.00	2,152.65	159.925	59,745,000.00	2,676.79

Table 48: Tourist's Expenditures per person/year in Developing Countries (2000 and 2010)

Country	Tourism Investment	Expenditure on R&D	Domestic Expenditure	Number of population	Expenditure per population	Visitor Export	Number of tourists	Expenditure per Tourist
	US\$ bn	(%)	US\$ bn		US\$	US\$ bn		US\$
Developing Countries								
China								
2000	15.800		59.840	1,242,612,226.00	48.16	17.318	31,229,000.00	554.55
2010	80.600		250.709	1,339,724,852.00	187.13	49.739	55,665,000.00	893.54
Hong Kong								
2000	2.280		4.451	7,041,100.00	632.15	8.236	13,059,000.00	630.68
2010	4.490		5.712	7,108,100.00	803.59	21.933	20,085,000.00	1092.01
India								
2000	1.940		31.859	1,000,000,000.00	31.86	3.598	2,641,000.00	1362.36
2010	22.900		67.061	1,210,193,422.00	55.41	13.383	5,584,000.00	2396.67
Indonesia								
2000	2.590		7.827	206,264,595.00	37.95	5.214	5,046,000.00	1,033.29
2010	10.600		29.273	237,641,326.00	123.18	8.042	7,003,000.00	1,148.36
Macau(China)								
2000	0.140		0.207	460,000.00	450.00	3.363	6,682,000.00	503.29
2010	2.070		0.322	560,100.00	574.90	19.517	11,926,000.00	1,636.51
Malaysia								
2000	3.450		3.493	25,348,000.00	137.80	5.873	10,222,000.00	574.55
2010	4.490		10.737	28,334,135.00	378.94	18.813	24,577,000.00	765.47

Table 48: (cont.)

Country	Tourism Investment	Expenditure	Domestic	Number of	Expenditure per	Visitor	Number	Expenditure per
		on R&D	Expenditure	population	population	Export	of tourists	Tourist
Developing Countries	US\$ bn	(%)	US\$ bn		US\$	US\$ bn		US\$
Pakistan								
2000	0.246		2.903	140,000,000.00	20.74	0.551	543,000.00	1014.73
2010	1.440		7.443	178,016,000.00	41.81	0.920	914,000.00	1006.56
Philippines								
2000	0.695		7.177	70,000,000.00	102.53	2.334	2,171,000.00	1,075.08
2010	1.680		12.806	94,013,200.00	136.21	3.934	3,520,000.00	1,117.61
Singapore								
2000	3.040		3.289	4,326,000.00	760.29	5.142	6,258,000.00	821.67
2009	11.600		4.529	5,183,700.00	873.70	10.318	9,161,000.00	1,126.30
Sri Lanka								
2000	0.236		0.457	20,743,000.00	22.03	0.388	400,000.00	970.00
2010	0.528		1.181	20,653,000.00	57.18	1.009	654,000.00	1,542.81
Taiwan								
2000	3.100		10.192	22,894,384.00	445.17	4.253	2,624,000.00	1,620.81
2010	4.870		13.784	23,197,947.00	594.19	8.193	5,567,000.00	1,471.71
Thailand								
2000	2.870		5.485	64,233,000.00	85.39	9.935	9,509,000.00	1,044.80
2010	7.930		12.001	69,519,000.00	172.63	22.636	15,842,000.00	1,428.86
Vietnam								
2000	0.332		1.208	70,000,000.00	17.26	1.078	2,140,000.00	503.74
2010	4.230		2.901	85,846,997.00	33.79	3.582	5,050,000.00	709.31

Table 48: (cont.)

Country	Tourism Investment	Expenditure	Domestic	Number of	Expenditure per	Visitor	Number	Expenditure per
		on R&D	Expenditure	population	population	Export	of tourists	Tourist
Developing	US\$ bn	(%)	US\$ bn		US\$	US\$ bn		US\$
Countries								
Argentina								
2000	2.300		13.136	38,747,000.00	339.02	3.195	2,991,000.00	1,068.20
2010	5.530		20.037	40,117,096.00	499.46	5.072	5,288,000.00	959.15
Bolivia								
2000	0.090		0.192	9,182,000.00	20.91	0.101	342,000.00	295.32
2010	0.090		0.378	10,426,154.00	36.25	0.336	671,000.00	500.75
Brazil								
2000	7.610		38.275	170,000,000.00	225.15	1.969	5,313,000.00	370.60
2010	21.800		109.184	190,755,799.00	572.38	6.474	5,161,000.00	1,254.41
Chili								
2000	0.765		3.907	16,295,000.00	239.77	1.179	1,742,000.00	676.81
2010	3.490		10.632	17,248,450.00	616.40	2.634	2,766,000.00	952.28
Colombia								
2000	0.538		2.195	45,600,000.00	48.14	1.313	530,000.00	2,477.36
2010	3.500		6.985	46,481,000.00	150.28	2.883	2,385,000.00	1,208.81
Costa Rica								
2000	0.104		0.642	4,327,000.00	148.37	1.477	1,106,000.00	1,335.44
2010	0.304		1.281	4,563,539.00	280.70	2.001	2,100,000.00	952.86
Cuba								
2000	0.287		0.684	11,269,000.00	60.70	1.948	1,561,000.00	1,247.92
2010	0.873		1.798	11,421,161.00	157.43	2.367	2,507,000.00	944.16

Table 48: (cont.)

Country	Tourism Investment	Expenditure	Domestic	Number of	Expenditure per	Visitor	Number	Expenditure per
		on R&D	Expenditure	population	population	Export	of tourists	Tourist
Developing Countries	US\$ bn	(%)	US\$ bn		US\$	US\$ bn		US\$
Dominican Rp								
2000	0.158		0.659	8,895,000.00	74.09	2.932	2,649,000.00	1,106.83
2010	0.415		1.478	9,378,818.00	157.59	4.985	4,125,000.00	1,208.48
Mexico								
2000	6.292		58.883	97,000,000.00	607.04	9.133	20,643,000.00	442.43
2010	12.952		78.895	112,336,538.00	702.31	15.037	22,395,000.00	671.44
Panama								
2000	0.163		0.297	3,232,000.00	91.89	0.628	479,000.00	1,311.06
2010	0.574		0.790	3,405,815.00	231.96	2.436	1,317,000.00	1,849.66
Paraguay								
2000	0.020		0.145	6,158,000.00	23.55	0.090	221,000.00	407.24
2010	0.050		0.310	6,337,127.00	48.92	0.228	465,000.00	490.32
Peru								
2000	0.533		2.925	27,968,000.00	104.58	0.861	1,027,000.00	838.36
2010	2.080		8.576	29,797,694.00	287.81	2.885	2,299,000.00	1,254.89
Uruguay								
2000	0.113		0.637	3,463,000.00	183.94	0.827	1,968,000.00	420.22
2010	0.615		1.126	3,368,595.00	334.26	1.474	2,352,000.00	626.70
Venezuela								
2000	0.877		6.457	26,749,000.00	241.39	0.469	469,000.00	1,000.00
2010	2.030		13.072	29,469,000.00	443.58	0.758	615,000.00	1,232.52

Table 48: (cont.)

Country	Tourism Investment	Expenditure	Domestic	Number of	Expenditure per	Visitor	Number	Expenditure per
		on R&D	Expenditure	population	population	Export	of tourists	Tourist
Developing	US\$ bn	(%)	US\$ bn		US\$	US\$ bn		US\$
Countries								
Egypt								
2000	1.410		4.664	74,033,000.00	63.00	4.657	4,489,000.00	1,037.42
2010	5.150		11.300	81,205,000.00	139.15	12.964	14,051,000.00	922.64
Israel								
2000	1.900	0.80	4.008	6,725,000.00	595.99	4.611	2,400,000.00	1,921.25
2010	1.710	0.98	7.368	7,798,600.00	944.78	4.472	2,805,000.00	1,594.30
Jordan								
2000	0.289		0.194	5,703,000.00	34.02	0.935	1,358,000.00	688.51
2010	0.541		0.333	6,239,900.00	53.37	3.646	4,557,000.00	800.09
Lebanon								
2000	0.211		0.524	3,577,000.00	146.49	0.900	742,000.00	1,212.94
2010	1.130		1.274	4,259,000.00	299.13	8.012	2,168,000.00	3,695.57
Oman								
2000	0.397		1.138	2,567,000.00	332.29	2.280	502,000.00	751.00
2010	3.130		3.393	2,773,479.00	547.33	7.928	1,524,000.00	764.44
Qatar								
2000	0.197		0.853	813,000.00	517.84	0.377	294,000.00	435.37
2010	0.765		1.518	1,699,435.00	1,049.76	1.165	1,659,000.00	407.47
Saudi Arabia								
2000	0.119		0.421	24,573,000.00	179.91	0.128	3,700,000.00	399.73
2010	1.240		1.784	27,136,977.00	381.47	0.676	10,850,000.00	762.95
U A E								
2000	3.990		4.421	4,496,000.00	609.65	1.479	3,027,000.00	2,155.93
2010	3.790		10.352	8,264,070.00	777.46	8.278	7,432,000.00	3,376.48

Table 48: (cont.)

Country	Tourism Investment	Expenditure	Domestic	Number of	Expenditure per	Visitor	Number	Expenditure per
		on R&D	Expenditure	population	population	Export	of tourists	Tourist
Developing	US\$ bn	(%)	US\$ bn		US\$	US\$ bn		US\$
Countries								
Bulgaria								
2000	0.176		0.864	7,726,000	111.83	1.364	2,785,000.00	489.77
2010	0.631		1.126	7,364,570	152.89	4.502	6,047,000.00	744.50
Estonia								
2000	0.090		0.090	1,330,000	67.67	0.657	1,100,000.00	597.27
2010	0.246		0.393	1,340,194	293.24	1.448	2,120,000.00	683.02
Kazakhstan								
2000	0.451		0.308	14,825,000	20.78	0.403	-	
2010	1.550		3.207	16,615,000.00	193.02	1.282	3,393,000.00	377.84
Poland								
2000	1.190		2.196	38,530,000	56.99	6.128	17,400,000.00	352.18
2010	3.060		5.545	38,092,000	145.57	10.951	12,470,000.00	878.19
Romania								
2000	0.080		0.692	21,711,000	31.87	0.403	3,274,000.00	123.09
2010	1.030		2.843	21,436,000	132.63	1.846	-	
Ukraine								
2000	0.127		1.109	46,481,000	23.86	0.563	4,232,000.00	133.03
2010	0.616		3.432	45,668,028	75.15	4.544	21,203,000.00	214.31

ABSTRACT

This research examines the importance of technological factors in international tourism specialisation. The test application consists in finding tourism data related to technology, as well as in synthesising the correlation between tourism and technological factors which appear in domestic tourism expenditures, visitor exports, tourism investment, and expenditures on research and development (R&D) in order to compare their proportions between 2000 and 2010 and analysed the information by country group classification (Advanced countries, Developing countries, and Least Developed countries). The results show that tourism investment and R&D are significant factors in enhancing the tourism receipts of a country. This interpretation relates more precisely to Vernon's "Product Life Cycle" theory which has proven to be a highly demonstrative tool as to the advantages of level technology in terms of added value in product quality and product development. The theory of Demand of Linder is also concerned in order to enhance each other between domestic and international tourism specialisation. It was found that most countries in the advanced group display a solid technological sector and an innovating economy as well as the data on R&D expenditures are mainly allocated in advanced country groups; this fact also influences the quality of tourism development in the long term. In developing countries, the domestic expenditures have shown stronger than visitor exports in countries with large population. The high population in the country reflects the size of its domestic market. In contrast, the proportion of visitor export is higher than domestic expenditures in the tourism destination countries; these country groups attract international tourists. The potential of expenditures by local populations in LDC countries is also weak, it obviously affects to the ratio of both domestic and international expenditures. The theories of Heckscher&Ohlin, Comparative advantage, and/or Absolute Advantage can be considered for LDC countries, they should take advantage of being tourist destination countries by applying the technology concerned to maintain the destination. Not only would this allocate physical capital but it would also enable them to invest in human resources (education, training, knowhow, and knowledge).

Keywords: Technological factors, international tourism specialisation, tourism expenditures, tourism investment

RÉSUMÉ

Cette recherche a pour objet d'examiner l'importance des facteurs technologiques dans la spécialisation internationale touristique. Le test consiste, à partir des données liées au tourisme et à la technologie, à synthétiser la corrélation existante entre tourisme et facteurs technologiques dans les dépenses du tourisme domestique et international, l'investissement touristique et les dépenses en recherche et développement (R&D), à partir d'une analyse comparative de données de 2000 à 2010, en fonction d'une classifications des pays par groupes (Pays avancés, pays en voie de développement, et pays moins avancés). Les résultats ont montré que l'investissement touristique et la dépense de R&D sont des facteurs significatifs en terme d'augmentation des recettes touristiques d'un pays. Cette interprétation, mise en évidence par la théorie de « cycle de vie du produit » de Vernon, s'est avérée être un outil fortement démonstratif quant aux avantages du niveau technologique dans la valeur ajoutée dans la qualité et le développement d'un produit. Par ailleurs, la théorie de la demande de Linder est également concernée, notamment pour déterminer la spécialisation du tourisme domestique et international. On a constaté que la plupart des pays avancés ont un secteur technologique performant et une économie d'innovation qui soutient un fort développement du tourisme. Il est évident que si les données de dépenses de R&D sont principalement présentes dans les groupes de pays avancés; cet élément influence également la qualité du développement de tourisme à long terme. Dans les pays en voie de développement, caractérisés par des populations importantes, les dépenses du tourisme domestique sont plus fortes que des dépenses du tourisme international, la population reflétant par ailleurs la taille de son marché intérieur. En revanche, la proportion des dépenses touristiques internationales est plus importante que celle des dépenses touristiques domestiques dans les pays considérés comme destination touristique à part entière. Par conséquent, ces groupes de pays attirent les touristes internationaux. Le potentiel de dépenses par les populations locales dans les pays moins avancés est également faible. En conséquence, il affecte la proportion du ratio entre dépenses domestiques et internationales. Cependant, les théories des avantages comparatifs d'Heckscher & Ohlin, et/ou des avantages absolus peuvent être ici considérées pour les pays moins avancés. Ils sont en effet un avantage pour ces destinations touristiques, qui pourraient permettre, en appliquant les technologies concernées, de maintenir la compétitivité de la destination touristique. Ceci concernerait non seulement les capitaux physiques mais il leur permettrait également d'investir dans les ressources humaines (éducation, formation, savoir-faire, et connaissance).

Mots-clés: Facteurs technologiques, spécialisation internationale touristique, dépenses touristiques, investissement touristique