

Economic impacts of sustainable marine tourism in the local economy

Case study: Dolphin watching activity
in New Quay, Cardigan, Wales.

Thesis submitted in fulfilment of the requirements
of the degree of MPhil

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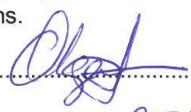
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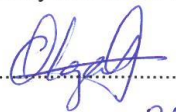
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Abstract

Cetacean watching activity as a touristic activity is steady increasing; its economic benefit has been estimated over US\$ 2.1 billion per year globally, with over 13 million people undertaking the activity in 119 countries (IFAW, 2008). However, there have been few studies examining the real contribution that this sub sector can make to the economic well-being of local communities. This project examines the paths of expenditure in a local economy with a marine wildlife tourism attraction. New Quay is a Welsh village located in Cardigan Bay Special Area of Conservation, in the county of Ceredigion, West Wales, which shelters one of only two semi-resident populations of bottlenose dolphins in the UK. Due to the presence of this charismatic species, in recent years the dolphin-watching tourism industry has shown a significant increase, transforming this traditional family holiday destination. Using the methodology “Local Multiplier 3” (LM3) developed by New Economics Foundation (NEF), the project aims to work out a multiplier ratio which will explain how much this touristic activity contributes to economic development of the host community and its potential as economic motor for the region.

This multiplier effect is calculated in three levels: the first one involves dolphin-watching tourists, asking them how and where they spent their holiday budget. Having identified the starting amounts and located the entry points into the local economy of New Quay, the second phase is addressed to the local businesses highlighted by tourists. The final stage is focused in the local spending habits of staff members of these businesses. From this grassroots approach to understanding the contribution of this tourism activity based on marine biodiversity, we can identify the mutual dependence between conservation goals and community livelihoods surrounding protected areas. Further, the project expects to contribute to promotion of a cross sectorial low carbon economy and also towards best practice in spatial planning, to ensure the most sustainable local economic outcomes.

*I have seen you
I have seen you unfold your best finery
to people known and unknown.
I have seen you excite, palpitate, agitate and
even make dizzy with that blue force,
calm and furious with which you are
sketched each day.
I have seen you shiny and vibrant
silent and serene, dull and furious
nocturnal and bewitching*

*-“Wow!, look at this! Awesome!”-,
curious voices,
anxious to discover the mosaic of colours,
of life that is hidden under your waters.
I have seen you*

*From land and sea. I have seen you
And only from those glances,
because of that flirtatious foam, salt and
vertiginous,
you have conquered me for always.*

*Thank you, Welsh Coast, for all those
journeys.
Olgaki, Aberystwyth, 2014*

*Te he visto.
Te he visto desplegar tus mejores galas
a propios y extraños.
Te he visto emocionar, palpitar, agitar y
hasta marear con esa fuerza azul,
calmada y furiosa que te dibuja cada día.
Te he visto brillante y vibrante;
silenciosa y serena; opaca y furiosa;
nocturna y hechizante.*

*-“Wow!, look at this! Awesome!”-,
voces curiosas,
ansiosas por descubrir ese mosaico de colores,
de vida que se esconden bajo tus aguas.
Te he visto.*

*Desde la tierra, desde el mar.
Te he visto.
Y sólo por esas miradas,
por ese flirteo de espuma, sal y vértigo,
me has conquistado para toda la vida.*

Gracias, Welsh Coast por todos esos viajes.

*Olgaki,
Aberystwyth, 2014*



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Partners of this journey

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That's all so far. See you soon.

Olgaki

All that follows has been greatly improved with the assistance of those named above. All errors and oversights are entirely down to me.



Erich Hoyt (O'Connor et al., 2009:283) described in the Afterword of the International Fund for Animal Welfare, what was apparently the beginning of cetacean watching. A fisherman in San Diego witnessed a special encounter with two cetaceans ' ... *It is longer, larger, grander in every way than anything the fisherman has ever seen. Wait! Two of them,(..)*' After that, a sign which read '**See the whales - \$1**' was hung on his boat in the harbour.

Something started that day in the southern California coast in 1955. More than 50 years later, that dollar from that spontaneous business initiative has provoked a multiplier effect of an estimated \$2.1 billion dollars in 119 countries. This industry is being run by 3,300 operators with around 13,200 employees. Their capacity to generate demand can be translated into approximately 13 million tourists who are booking a boat trip with the sole purpose to have an exciting encounter with marine mammals of oceans over the world (O'Connor et al., 2009). However, returning to the local perspective, how can these impressive figures be translated into local economies? How much economic benefit does the community receive from marine wildlife watching activity? These questions reflect the entire spirit of this study: to explore the local economic dimension of this global industry.

Chapter 1. Introduction

This project, following a funnelling approach, starts by illustrating the development and macro-economic benefits of wildlife tourism on a global scale, taking Cardigan Bay, Wales, as the research context of this case study.

1.1 The impacts of wildlife tourism

Wildlife has intrinsic value for human society, sometimes prized by the market, sometimes outside of the human economic system. In both cases, it has enough value to be considered important when making management decisions, and wildlife tourism has emerged as one of the strongest of these. Wildlife tourism offers encounters with non-domesticated animals (Higginbottom, 2004), with a broad range of activity; from photographic safaris in the East African game parks to whale watching in the Antarctic regions. There are no exact figures for the global economic contribution of wildlife tourism, but scholars generally agree that it represents a substantial and rapidly growing segment of the world tourism industry (Roe *et al.*, 1997; World Tourism Organization, 2010), which is itself a major contributor to world GDP (Roe *et al.*, 1997; World Tourism Organization, 2010). Wild animals have become a core or significant part of a burgeoning industry, in many cases replacing traditional uses like agriculture and even contributing substantially to the economy of many countries (WTTC 2000 cited in Higginbottom, 2004).

Wildlife tourism has simultaneously been proposed as an inherently sustainable form of tourism development, one that is able to secure substantial economic benefits while supporting wildlife conservation and local communities (Higginbottom, 2004). This outcome has sometimes been described as 'triple-bottom-line' sustainability (Elkington, 1997), including: "social equity, economic and environmental factors" or "people, planet, profit". These benefits could be translated for the host communities into such categories as employment, income, diversification of economic base and/or business opportunities, upgrading of infrastructure, visibility, and cultural benefits (Ashley & Roe, 1998; Edgell, 2002 cited in Higginbottom, 2004:135). Such economic advantages are especially attractive for rural areas where the wildlife is located, contributing to its sustainable development. In the USA, nearly 71.8 million people photographed or observed wildlife during 2011, spending

\$55 billion on these activities (U.S. Fish & Wildlife Service, 2012). With this attractive economic picture for operators and destinations, an increasing number of dedicated wildlife-watching operators have emerged globally in recent years. The economic sphere of tourism, like many other industries, operates through business-to-business and supply chain relationships. When it is used effectively, these links can improve the financial performance of businesses involved, and potentially improve the livelihoods of host communities. All businesses involved in delivering the tourism product collectively form the so-called tourism supply chain (Song, 2011; Zhang *et al.*, 2009). An industry like tourism, based on an intensive service, is supported by the development of a wide supply chain that covers all the necessities of visitors. Direct services (accommodation providers, entertainment), activity providers, transport providers, service staff and local craftspeople are supported by many indirect producers and suppliers of raw materials as well as waste management and disposal services.

The relationship between the consumer and the service provided relies on effective management. In addition, the inherent dynamism of this tourism is inevitably influenced by the socio-economic, cultural and environmental contexts in which they operate. Consequently, all stakeholders, whether they are consumers, tour operators, hotel managers or local business and residents, are increasingly interested and concerned about the impacts of tourism activity on the local economy. In this sense, economic evaluation becomes a powerful instrument to measure and compare the different uses of natural resources and their outcomes (IUCN, 1994; IUCN, 1998). Based on the above, developing knowledge related to how the supply structure works could contribute to maintaining both social and environmental sustainability and financial viability of the tourism product.

1.2 The history of a fascination: the economic value of whale watching¹ on a global scale.

Wildlife has always provoked contradictory feelings for humanity throughout history. For some, the wildest face of nature means fear, danger, and those elements which need to be controlled and combatted. Others meanwhile are attracted to it by the very same

¹ For the purpose of this study, the concept “whale watching” includes whales, dolphins and porpoises, with the condition that the watching is in their wild environment.

characteristic and its freedom to simply be itself. These nature lovers have been working towards a greater respect for nature, and their efforts have been rewarded with a global society which is more aware of our environment. After millennia of a consumption-based relationship between human society and wildlife, recent conservation trends have demanded a rethink of this relationship. Adopting a less exploitative approach, ecotourism has been cited as a panacea for this development, with the shift from whale hunting to cetacean watching tourism as the best-known example (Neves, 2010; Orams, 2002). Whales and dolphins provoke a special empathy and curiosity from people, forming the foundation of an industry based on their sightings, (Filla, *et al*, 2012). The magnetism that marine mammals awaken in human beings is supported by impressive profits from its observation, with cetacean watching having become an “economic miracle” for many regions around the world. In this sense, tourism and recreation have been an attractive source of income because of the relatively lower costs of capital input in comparison with traditional industries like fishing (Fil A, G.F *et al*, 2012).

In global terms, the figures suggest an economic scenario of 13 million tourists in 119 countries, contributing USD 2.1 billion to the global economy (Cisneros-Montemayor, *et al*. 2010; O'Connor, 2009). This spectacular economic scenario was one of the main arguments to support the ban on whale hunting (Evans, 2005; Oliveira, 2005; Oliveira *et al.*, 2007). Therefore, the main reason for these increasing profits is the activity of whale watching (Filla, G.F *et al.*, 2012). Indeed, the benefits derived from this activity are not only related to revenue, as social profits can be higher than economic ones. Places where cetacean populations show their presence can generate significant employment opportunities, whether it is a large tourism destination or a small fishing village. In addition for these rural areas it may be an opportunity to diversify the local economy.

On a global scale, the whale watching industry was generating over 13,000 jobs in 2008 (O'Connor *et al.*, 2009), with the greatest concentration of over 6000 in North America, confirming again that this region has large tradition in this industry. In Europe, just 800 jobs are related to whale and dolphin watching, with a density of around 867 tourists per employee in the industry (the lowest rate 543 being in Oceania and the Pacific Islands, and

the global average more than 1,200²). However, due to intrinsic characteristics of the sector (strong seasonality related to migration of target species) employment is not permanent in the majority of destinations. In spite of this fact, 'recreation-related employment can be more than five times greater than employment in resource exploitation in the same territory, and gross economic benefits are often more than ten times greater' (Higginbottom, 2004: foreword).

The consequences in conservation goals can be shown as the three bottom line approach - economic, socio-cultural and environmental perspective - demands. In this sense, it is important to highlight that the activity of cetacean watching could carry a significant risk for the cetacean due to the operation of tours which usually happen during vulnerable stages of the species such as migration, breeding, feeding, resting and socialising (Higginbottom, 2004). During the five decades since the first whale watching tourist activity (California fisherman in 1955), the situation of cetaceans changed dramatically from near extinction to concern with worldwide public support. This international effort has contributed to develop a flourishing economic activity as cetacean whale watching providing a strong economic incentive through this non - extractive use, demonstrating the potential economic value of this charismatic species (Hoyt & Hvenegaard 2002). Therefore, this economic activity would be linked to the destiny of the cetacean, its ecological requirements and socio- political issues related to these charismatic species. The Whale Watching Worldwide report (O'Connor *et al.*, 2009) emphasises that the protection of the economy goes hand-in-hand with conservation and environmental protection.

These remarkable revenues have been obtained thanks to an unprecedented process on an international scale which deserves consideration: reflecting on the past always gives clues about how success was reached, especially those ones related to economic development. In the 1960s this extractive activity of whale hunting reached its peak thanks to the technological development of the factory ship, (O'Connor *et al.*, 2009). Some decades later, this situation changed dramatically when the International Whaling Commission declared the moratorium on commercial whaling in 1986. This was the tipping point in order to turn a

² An indicator how the activity runs in each continent: the less number tourists each guide has to manage the higher probability of good quality of service can be offered.

corner, and begin on a path towards the current more optimistic situation. This crucial decision contributed significantly to protect whales from the threat of extinction. Before this date, cetacean numbers were declining at an alarming rate, with the almost complete collapse of the whale population in the 1980s (O'Connor *et al.*, 2009). The end of this extractive activity came in 1986 with legislation being enacted that protected whales (Filla, *et al.*, 2012). However, this consequently brought with it some social problems in many whaling communities because of the considerable number of people who were employed in this activity. Marine wildlife tourism became a feasible alternative for these people because of the experience accumulated by the hunters in finding and identifying cetaceans, skills truly appreciated in this less detrimental activity (Servidio & Elejabeitia, 2003). This historical reorientation brought resulted in the flourishing of the cetacean watching industry. According to the available records regarding this activity which date from 1981 (Hoyt, 2008), at that time, 12 countries already counted on this activity in their waters and the number of whale watchers reached around 400, 000. Seven years later, in 1988, this figure had turned into 1.5 millions of tourists with over \$50 million of total revenues - direct and indirect expenditure³ - (Hoyt, 1984 cited in O'Connor *et al.*, 2009). Over the next decade, the whale watching activity experienced significant growth and development over the world, including key countries which maintained a hunting industry, such as Japan and Norway. By the early 1990s, commercial whale watching was taking place in 31 countries (O'Connor *et al.*, 2009) and experienced a growth from 4 million whale watchers in 1991 to 5.4 million in 1994 then 9 million in 1998, with a total expenditure of \$ 1, 049 million for that year according to IFAW's Whale Watching 2001 report based on Hoyt (1992, 1995, 2001) cited in O'Connor *et al.* (2009). Likewise, the number of communities with whale watching in their waters increased from 200 in 1994 to 492 four years later (Higginbottom, 2004), throughout 87 countries (Hoyt, 1995, 2001). As a result, that decade finished with 'a 12% average annual growth rate, about 3-4 times the rate of overall tourism arrivals' (Hoyt 2001 cited in Higginbottom, 2004: 284). The early 2000s saw a slower rhythm of growth due to security or economic issues, which affected tourism seriously on a global scale because of events like 9/11 and the start of the financial crisis in Western countries in 2008. However

³ This report considered the indirect expenditure as costs such as accommodation, transport and food. On the other hand, the ticket price was included in direct expenditure as well as other items directly related to the trip itself.

cetacean watching maintained a good level of growth during the decade despite tumult within the tourism sector. Figures show a 3.7% average annual growth rate between 1998 and 2008 in comparison with the global tourism growth of 4.2% per year over the same period (O'Connor *et al.*, 2009). This percentage represents a whale watching expenditure of \$2.1 billion with \$870 million generated from whale watching trips (direct expenditure) and the other \$1.2 billion were from indirect expenditure associated to this economic activity (IFAW, 2008 cited in O'Connor *et al.*, 2009).

This entire journey shows a burgeoning industry which has reached maturity in some regions, but at the same time is in an infancy stage in other parts of the globe, therefore a regional analysis is essential in assessing the current level of activity and its potential according to trends. As table 1 indicates, there is a clear evidence of a strongly emerging industry where the Asian region has been experiencing the highest rate of growth in this period, at 17% per year. In general, the regions considered "developing" reached ratios over 10%. The more developed markets kept growth below this dividing line, highlighting the limit of 1.3% which can be explained by the maturity of this activity in these countries.

Table 1: Figures about the whale watching activity during the period 1998-2008⁴

Region	Whale watchers		Regional AAGR ⁵	Number of countries		2008 Direct Expenditure millions	2008 Total Expenditure
	1998	2008		1998	2008		
<i>Africa and Middle East</i>	1,552,250	1,361,330	-1.3%	13	22	\$31.7	\$163.5
<i>Europe</i>	418,332	828,115	7.1%	18	22	\$32.3	\$97.6
<i>Asia</i>	215,465	828,115	17.2%	13	20	\$21.6	\$65.9
<i>Oceania, Pacific Islands and Antarctica</i>	976,063	2,477,200	9.8%	12	17	\$117.2	\$327.9
<i>North America</i>	5,500,654	6,256,277	1.3%	4	4	\$566.2	\$1,192.6
<i>Central America and Caribbean</i>	90,720	301,616	12.8%	19	23	\$19.5	\$53.8
<i>South America</i>	266,712	696,900	10.1%	8	11	\$84.2	\$211.8
GLOBAL TOTAL:	9,020,196	12,977,218	3.7%	87	119	\$872.7	\$2,113.1

Source: IFAW report (O'Connor *et al.*, 2009:24)

⁴ These figures are the result of ' surveying tourism operators, government tourism offices, academics, researchers and organisations (including non - government organisations) involved in whale and dolphin research, tourism and conservation across all countries and territories covered in the report (O'Connor *et al.*, 2009:30). The secondary source of information was also considered (literature review and interviews already done)

⁵ Annual average growth rate. The AAGR is calculated assuming a geometric rate of growth from 1998 results to those for 2008 (O'Connor *et al.*, 2009:32).

The European continent is a mature whale watching destination, reflected in the figures related to tourism with around 800,000 visitors coming to its waters who are interested in the observation of marine cetacean - double the number of visitors in 1998 (O'Connor *et al.*, 2009). Its importance at a global level translates into 6% of total whale watchers and a continual tendency of growth (O'Connor *et al.*, 2009) as these following figures show: 7.1 % growth per annum as average - AAGR- for the last decade (early 2000s); 22 countries where the most recent four countries are incorporated during the period 1998-2008; (the market is already mature in this continent for that reason during the period 1998-2008 only four countries incorporated to the European whale watching countries (22 territories)); and nearly \$100 million in total expenditure, being more than \$ 32 million related to direct expenditure and the rest, around \$65 million, generated by supporting structure of this activity (indirect expenditure)

Within these European countries and territories, the United Kingdom together with Iceland represents the major proportion of revenues - 19% and 17% respectively, although if Portugal as a whole is taken into account (both mainland and Madeira and Azores islands), this southern European country would represent the largest portion of the continent with approximately 23% of total revenues (O'Connor *et al.*, 2009). The UK saw a spectacular growth in the last decade, reaching a peak at \$21 million of total expenditure and average annual growth of 8%. However, the most significant factor is the number of operators which increased from 14 in 1998 (generating nearly \$2 million of direct expenditure) to 76 in 2008, with close to \$6 million generated from the sales of trip tickets (O'Connor *et al.*, 2009). The indirect expenditure shows a more remarkable increase with over \$9 million more in 2008 in comparison with 1998. This upturn could be explained by the strengthening of supporting structure of this activity such as accommodation, restaurants and services providers. With respect to the volume of whale watchers, the UK is also in a good position, especially because of the strong health of this industry in Scotland, the country with the European largest proportion of whale watchers with approximately 27% (223,941 watchers) as table 2 illustrates. Meanwhile, Iceland and Ireland account for 14% each, followed by Spain at 9% and Madeira and Portugal with 7% each (O'Connor *et al.*, 2009:81).

Table 2: Figures for whale watchers during the period 1998-2008

Country	Number of watchers		Growth between 1998 and 2008
	1998	2008	AAGR
<i>England</i>	5,125	9,160	6.0%
<i>France</i>	750	5,535	22.1%
<i>Gibraltar</i>	18,750	35,371	6.6%
<i>Iceland</i>	30,330	114,500	14.2%
<i>Italy</i>	5,300	14,415	10.5%
<i>Portugal - Azores Islands</i>	9,500	40,180	15.5%
<i>Portugal – Madeira Archipelago</i>	None	59,731	72.9%
<i>Portugal - Mainland</i>	1,380	58,407	45.4%
<i>Scotland</i>	99,000	223,941	8.5%
<i>Spain</i>	25,000	74,629	11.6%
<i>Wales</i>	17,000	33,349	7.0%
REGIONAL TOTAL	418,332	828,115	7.1%

Source: IFAW report (O'Connor *et al.*, 2009:82).

Therefore, within the European and British region, Scotland is a model of marine wildlife watching, with an expenditure of £63 million in 2009 which generated an income of £36 million (Bournemouth University, 2010). The capacity of creating employee was around 1,705 FTE.⁶ Due to the multiple connections between marine and coastal tourism, it is important to add to this balance the figures which this latter sub-sector generated: £56 million in income and 2,681 FTE employees in 2009 (Bournemouth University, 2010).

In Wales, cetacean watching is also significant. Wales generated over \$2.6 million of total expenditure, generating \$863,266 as direct expenditure and \$1, 743,458 as indirect expenditure during 2008. These healthy economic results reflect an increase in the number of whale watchers, at a rate of 7% per year from 1998 (from 17,000 to 33, 349). This percentage could be explained by the proliferation in the number of tour operators, from 3 in 1998 to 17 in 2008 (O'Connor *et al.*, 2009). Milford Haven and St. David's in the south, Pwllheli in the north, and Cardigan Bay with New Quay in Mid-Wales, form the cetacean watching industry on the Welsh coast. Cardigan Bay is home to approximately 50% of the total sea-based cetacean watchers; departure points are located in Cardigan, New Quay and Aberystwyth (O'Connor *et al.*, 2009). Newquay is a former fishing village, smuggling port and location for the shipbuilding industry, but today is mainly known for tourism with its warmer weather, sandy beaches, spectacular cliffs, and family holidays. In recent years it has also

⁶ FTE: Full Time Equivalent

become known as an ecotourism destination, ideally situated in the Cardigan Bay Special Area of Conservation. The sea around the village shelters one of the only two semi-resident populations of bottlenose dolphins in the UK, and due to this charismatic species, in recent years the dolphin-watching tourism industry has experienced an unprecedented increase. Currently, a cluster of marine wildlife tourism businesses has been set up in Cardigan Bay. They are mainly generating a “soft ecotourism” proposal relying on this popular species as a low carbon tourist attraction, and at the same time, showing an awareness of the importance of the adequate distribution of benefits from this dolphin watching activity within local economy.

1.3 Marine wildlife tourism into the local economy.

In 2013 the tourism economy will have directly contributed some £3.1 billion to Welsh Gross Value Added (GVA). This is equivalent to some 6.3% of total (GVA) in Wales. The tourism industry currently accounts directly for 114,000 jobs in Wales. This is equivalent to approximately 8.2% of all jobs in Wales. Taking into account indirect and induced expenditure, the report estimates the wider tourism economy currently contributes some £6.9 billion to Welsh GVA – some 13.9% of the total, while supporting some 206,000 jobs.

The recent Visit Britain report (Nov 2013)
prepared by Oxford Economics

Considering these figures, it is clear that the tourism in Wales is vital strategic sector at an economic and social level. Its key role in the development of the Welsh economy is irrefutable. This new economic scenario has already been noticed by the academia and other institutions, which are starting to focus on some studies and research projects in the leisure activity. However the key question is what kind of local and regional development and for whom? Although tourism usually generates impacts on different ways for different social interests, it doesn't mean that they can choose and act under own terms (Pike et al. 2007). The important lesson which can be extracted from the above figures is that this activity needs to link different layers of the economy, bringing benefits to other sectors not directly involved in the recreation activity such as enterprises which focus ICT, construction, creative industries and financial & professional services. This diversification in the tourism

expenditure can also be reflected in the increase in employment. As a result, this positive breeding ground is generating a positive tendency of growth with 15.3% since 2005 and a continuous progress since 2008, becoming the fastest developing sector (End Year Report 2013. Tourism Advisory Board, Welsh Government). However, can the wildlife tourism be included in this picture? According to continuous reports (Hoyt, 2001; Economists at Large, 2004, 2005, 2008 a,c cited in O'Connor, et al., 2009) whale watch tourists have a tendency to expend more money on average. Of course this is partly a result if the price of the boat trip is taken into account, and therefore their daily expenditure already reaches higher levels than other alternatives.

A deep analysis reflects that apparently some factors have triggered an unstoppable interest in this type of recreation. These elements are described as a better domestic economy with higher family incomes; improvement of education levels; major spare time to enjoy; upgrading of transport system; decrease of the costs of recreational equipment; and growth in the demand of natural areas for recreation (Tisdell, 1974 cited in Higginbottom, 2004). This final factor has the key to understand the flourishing of this tourism option. The analysis is based on two elements. On the one hand, the proposal of wildlife tourism in their own ecosystems is not on a mass scale because the "natural lands" are limited due to use of these areas for other activities such as agriculture, urban sprawl or, ironically, tourism residences. However, at the same time, having become aware that these lands are more and more valuable because of this increase in wildlife tourism, there is a "reconversion" of these lands underway to their original nature status (Higginbottom, 2004). Therefore, in this situation tourism could be contributing to the conservation goals. In this sense, according to the UN-HABITAT over half of the human population is living in cities. Therefore its relationship with nature is being transformed into a luxury product or "virtual" phenomenon in the collective imaginary which is maintained through such forms as documentaries, films, and videogames. Consequently, a far from negligible amount of city dwellers look for "an authentic" nature experience through wildlife tours, in that way raising its demand significantly. At the same time, in this process of incorporation of the environment in all sectors of the society, it has been demonstrated that environmental practices can stimulate new rounds of economic growth (Gibbs 2000 and Murphy 2000a cited in Pike et al., 2010). All these reasons have provoked an increasing interest in this type of tourism, as mentioned

previously, which is reflected in the same growth of organisations, institutions, enterprises and universities which are working on this recreation sector. These bodies are generating best guidelines, documentaries, research studies, guide books, and even academic modules related to free-ranging wildlife tourism since 1990s. The USA, Australia as pioneer countries followed by Europe and now other regions throughout the world, have converted this called “alternative” tourism into a truly profitable business which is gaining more and more adepts.

On the other hand, inside this tourism option, as in everything, some animals always generate more attraction than others, and in this sense, marine cetaceans, are in a privileged position, especially dolphins, which enjoy an unconditional empathy by the general public. As a result, the marine wildlife tourism, especially cetacean watching, is a worldwide activity which is steadily increasing. In this sense, it is important to start highlighting that its economic benefit has been globally estimated at around US\$2.1 billion dollars (O’Connor *et al.*, 2009). However, only a few studies have examined the real contribution that this sub-sector can make to fulfil economic sustainability of peripheral and regional wildlife tourism destinations. In this sense, ecotourism could be a stimulating option of development for these peripheral areas, contributing to the capture of the revenues for the local economy due to the fact that these tourists are truly interested in patronizing locally owned establishments (Hampton 1998). However, these areas are still bearing some deficiencies at logistic and economic level. That means that the lack of capital, expertise and infrastructures are the key elements that explain the continued dependence of these rural destinations on the core area where the majority of supplies and products for tourism are elaborated. As a result, the socio-economic leakages are higher than expected ones considering that the main resource, nature, is located in these forgotten places (Lacher *et al.*, 2010). In this way, the business fabric of this local economy is weakened by the necessity of imported goods and therefore, its multiplier effect is decreased, impacting negatively on local development.

For all of these reasons, the scrutiny of economic analysis of the impacts of wildlife tourism should be considered at these community levels (Higginbottom, 2004). Following this argumentative line, this study is focused on examining the paths of expenditure in a local economy with a strong marine wildlife tourism product: in West Wales, New Quay, a

traditional holiday spot known for sheltering one of the only two semi-resident populations of bottlenose dolphins in the UK. Its continuous development is currently provoking an increasing demand for tours and, consequently an imperative need for accurate and sustainable management in order to achieve a positive economic impact for the whole local community. In this sense, a research project into the economic multiplier effect is considered relevant for this development strategy: the Local Multiplier Effect (LM3) and its use. In this way, this tool can help to show the people and organisations involved how to improve their local economic impact (Sacks, 2002).

To summarise, this chapter has outlined the economic dimension of this industry at all scales from global to local. It will now move to outline the conceptual framework where this study is based.

Chapter 2. Research framework

In this section an overview is given on how the wildlife tourism could be assessed from an economic perspective. First of all, a quick review of the market value of the wildlife and the consumption behaviour of their visitors are introduced. Following that, tourism finance techniques are examined, exploring the multiplier effect method. In this sense, the local multiplier effect (LM3) as the chosen method has the privileged position inside the chapter. At the same time, the main reasons for carrying out this project will be explained in the justification section.

2.1 Conceptual background

Tourism generates dynamics which can be considered an “invisible export” (Archer 1882; Fletcher *et al.* 2013) when host destinations receive tourists from another country or region. This concept emerges from the idea that Tourism is considered an experience in which the host destination “sells the experience” to the generator and therefore, the host destination exports tourism. In this project, it could be argued that Wales’s exports tourism to England and, as with any export good, engenders a flow of external currency which enters straight into the economy of the destination. Furthermore, this monetary input generates additional business profits, household income and government revenue. The initial tourist spending is spread across local economic networks in the so called ‘multiplier effect’, such as in accommodation, shops, and restaurants.

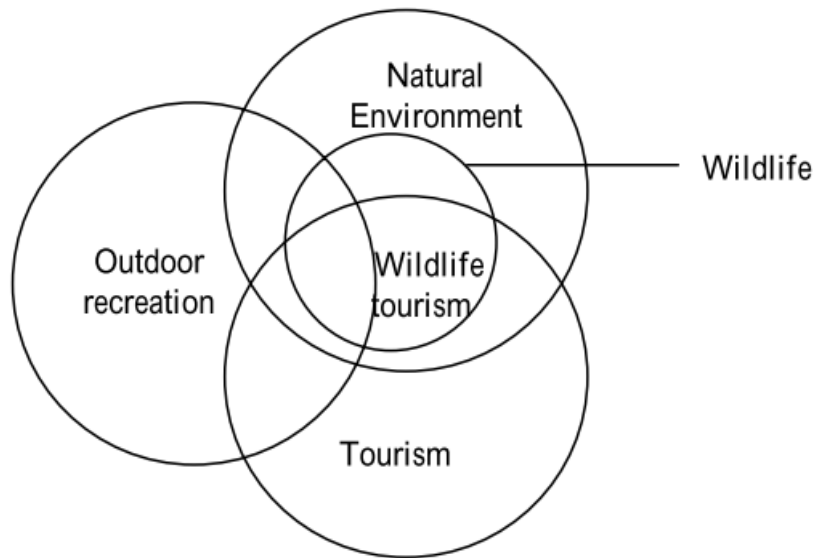
In recent decades the service sector has shown a dramatic growth within the whole economy. Considering tourism as the largest service-based industry, its dynamic has significant weight within the trends of the service sector. This global role was supported by the establishment of General Agreement on Trade in Services (GATS) as a resolution of the World Trade Organization’s Uruguay Round of the General Agreement on Tariffs and Trade (GATT) held between 1986 and 1994. This expansion within the economic sphere generated multiple ramifications and variants in its implementation. As a result, nowadays the society enjoys the wide-ranging offer of tourism proposals where different resources and services

become accessible for visitors. The supply chain involved in each type of tourism generates specific economic impacts; therefore one of the first steps is to understand and consider the distinctive characteristics of each leisure initiative. In this sense, as has been shown in the introduction, this project was conceived inside of the wildlife tourism concept. Hence, what is the theoretical structure on which this tourism option is built?

2.1.1 Framework of wildlife tourism

This study is demarcated within the **nature-based tourism concept**. The core of this type of tourism is the design of a recreation activity related to natural resources. However, the conceptual debate about its requirements and distinctions with respect to other tourism options is still contested in the academic environment, with debates about the relative importance for conservation and environmental education for example (Barbier, 1992; Tisdell & Wilson, 2001). This term usually overlaps with others which show similarities related to the tourism attraction - nature - and how it is used, such as wildlife tourism, special interest tourism and ecotourism (see Figure 1). This theoretical “challenge” contrasts with the dramatic increase of this tourism option. More and more tourists demand “unspoilt” natural areas as a desirable destination for their trips (Holden & Sparrowhawk, 2002). Some scholars maintain the thesis that nature tourism has been subject to the fastest growth in the entire tourism industry (Mehmetoglu, 2007). However for this project, nature-based tourism is considered the conceptual “umbrella”, within which the chosen specific model is contained: wildlife tourism.

Figure 1: The context of wildlife tourism.



Source: The context of wildlife tourism. (Higginbottom, 2004:254)

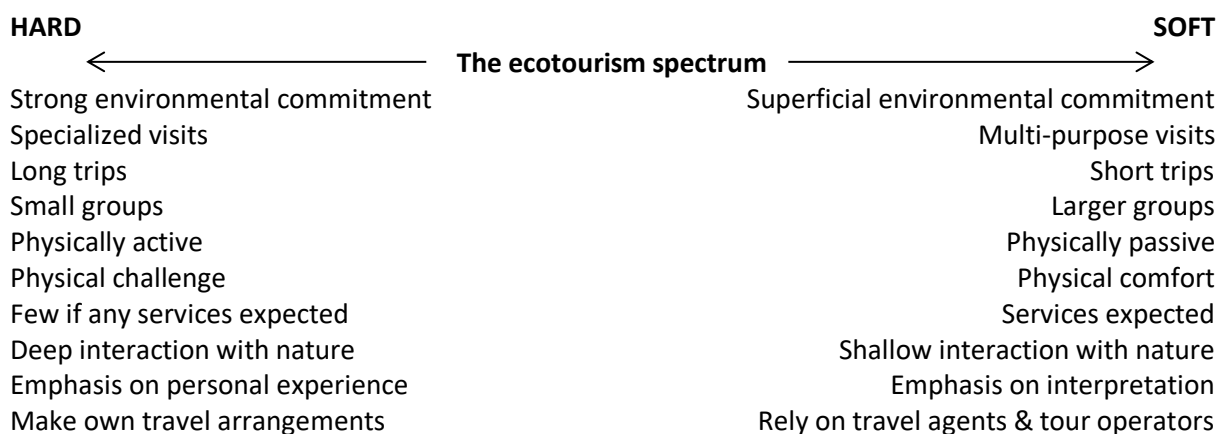
This subset highlights an option which is strongly supported among the tourists who are seeking out an experience in nature. But, at the same time, it can entail variations, taking into account the following antagonistic variables: consumptive vs non-consumptive; captive - free (range) continuum; and wildlife-dependent vs wildlife-independent. In this sense, the wildlife-dependant experience is described as that where the primary aim of the recreational initiative is an encounter with wildlife, whilst wildlife-independent is categorised by activities where wildlife watching is an extra bonus, being a secondary purpose of the activity (Higginbottom, 2004). In addition, key factors such as the chosen environment (land, coastal, marine); type of encounter (viewing natural behaviour, viewing performing animals, viewing non-living animals); degree of dispersion or concentration of wildlife; and type of supplier (private tourism operator or community/government) (Higginbottom *et al.*, 2001), define the different wildlife options. Therefore, specialised tours such as night spotlighting tours; places where animals congregate as part of their migrations; nature-based tours; zoos; trophy hunting; or researching or academic trips can all fulfil this alternative tourism experience when the wildlife is an important part of the proposal (Higginbottom & Buckley, 2003). The grade of specialization level will depend on

the weight of wildlife component inside the experience. Among the specialised excursions, cetacean watching has become one of the most popular tours.

Taking into account this conceptual framework, this study focused on this particular type of wildlife tourism offer, where whale watching is understood as a 'non-consumptive' activity, the encounters are with non-domesticated animals in their natural wild non-captive environment. Dolphin watching activity in New Quay is carried out in the free-ranging continuum conditions of the Cardigan Bay coastal marine environment, where the dolphins are concentrated providing a high degree of wildlife tourism experience and the activity is run by private tourism operators. However, Valentine (1992) pointed out that whale-watching could be developed in different ways depending on factors like location, style and category of experience. In this sense, it is important to mention that sites with special nature resources which have set up a tourism offer based on these attractions, usually do not confine its accessibility to specialist tourism exclusively. In this sense, wildlife-based tourism sites could attract broader groups of visitors. Since early times, academics have tried to classify these tourists. Duffus & Dearden (1990) were the first to categorize the non-consumptive wildlife activity participants: a distinction between experts/specialists and novices/generalists. This conceptualization has been used in numerous studies (Manfredo & Larsen, 1993; McFarlane, 1994; Martin, 1997; Cole & Scott, 1999). Within this scheme the more specialist wildlife watchers are tourists "who use a wider range of information sources; seek a wider range of species to view; are more interested in interpretation/education; are more interested in rare species; and have higher levels of physical activity" (Higginbottom, 2004:178). Likewise, recently, authors like O'Connor *et al.* in their recent report on Whale Watching Worldwide for the IFAW (2009) introduced a new classification for whale watch trips and operators, in this manner, in order to distinguish this recent and complex activity and market: 'dedicated' vs 'opportunistic'. According to this study, *dedicated* refers to experiences which have been advertised as recreational activities where the primary intention and motivation is the specific wildlife encounter. Whilst *opportunistic* is defined when viewing of whales is an extra bonus for a multipurpose trip. These categories have been used in other studies like dolphin watching in Lovina conducted by Mustika *et al.* (2012)

However, every economic activity should be viewed from the holistic approach, with other elements which integrate the system, and wildlife tourism as in every other form of recreational activity is no exception. The respectful interaction between the tourist proposal and the “common good” (nature) should be a priority in the entire "business" system, as is shown in community-based tourism initiatives. Impacts in the local economy also should be a core element in the strategy of the destination. In other words, the benefits and costs for nature, the host community, tourism industry, and visitors form the baseline for this type of tourism. In this vein, when wildlife tourism activity involves interpretation/education services or any conservation initiatives, it is considered as ecotourism (Weaver, 2001), becoming a special interest tourism (Hall & Weiler 1992). At the same time, ecotourism involves multiple initiatives with a wide range of characteristics which were clearly described by Weaver (2005) who divided them into hard and soft types:

Figure 2: Characteristics of Hard and Soft Ecotourism as Ideal Types



Source: Weaver, D.B (2005:447)

In this sense, whale watching usually is treated as a form of ecotourism (Garrod & Wilson, 2003):

‘purposeful travel to natural areas taking care not to alter the integrity of the ecosystem, while producing economic opportunities that make the conservation of natural resources beneficial to local people’(Beasley *et al.*, 2010:1).

Therefore, as is mentioned above, there is an unavoidable link between tourism activities related to natural resources with economic development in the area. For example, as Cater & Cater (2007) mentions, a 10% decline in tourism activity in the Great Barrier Reef national

park could generate an annual economic decline of around Aus\$52 million in regional output according to a report carried out in 2001 (Hassall & Associates). In this sense, there are numerous studies and reports which have proved that the adequate use of ecosystems brings prosperity to whole region - as the Millennium Ecosystem Assessment is endeavouring to show. This global stream is a good example to highlight the fact that where the nature is involved, the economic assessment is more complex because the tourism expenditures alone cannot display the whole economic impact in one region. Consequently, it is relevant to do a quick review on how common goods and the future of ecotourism are related intimately. In other words, the value of one activity is beyond the financial payments made in regard to it; this being the sum of economic use value plus economic non-use value (Pearce *et al.*, 1994)⁷.

2.1.2 The value of common goods for economic development, beyond tourist purchases

Nowadays, the total assessment of economic value involves the "direct" benefits, represented by the market value which, in turn, is composed of consumptive (e.g: recreational fishing or hunting) and non-consumptive (e.g.: wildlife watching). Further, there are "indirect" use values which are embodied by the non-market values. Tourism could be considered a non-consumptive direct use value (Catlin *et al.*, 2013; for a description of value types see Turner *et al.*, 2003). On the other hand, the non-use values reflect; the economic pure existence value of the species; its bequest value, by which is meant the willingness of some people for conserving them for future generations; and its option values (Higginbottom, 2004; IUCN, 1998; Tisdell & Wilson, 2004). This latter one, which refers to the possibility of future use, is still a controversial point because currently for some this value is considered non-use, yet for others (for example, Pearce *et al.*, 1994) if in the future it could be used it should not be considered a non-priced benefit, since there still remains this possibility. However all of these three non-use values are still not priced by the market system.

⁷ Note that these values are often measured in money terms.

Table 3: Total economic value of wildlife

		Use value			Non-use value
Total economic value of wildlife	=	1. Direct: watching, fishing or hunting. 2. Indirect: Ecological functions. (non-market value)	+		Existence value: Benefit of knowing the wildlife exists. Often measured by willingness to pay money or time. Bequest value: Provides benefit of knowing the wildlife will be around for future generation. Option value: Insurance to retain option of potential uses. Wildlife is as a resource bank. (all non-market values)

Source: IUCN (2000:114)

In the case of dolphins, their use in wildlife watching could be divided by direct value per se and its indirect value which would be represented by its role in safeguarding the health of the ecosystem, and consequently it would be expected that the tourism experience would benefit from it. On the other hand, some tourists would be willing to pay more for a tour just because there are dolphins in the area. Others might come back to the area in order to show this special area with dolphins to relatives and friends (especially to children). And last but not least, the possibility of finding other human benefits from healthy dolphin populations should be a strong enough argument to support the research in this field, such as this study for example.

It is remarkable to point out that the system is not efficient in incorporating this non - use value due to the fact that the users and owners do not perceive the economic benefits from it, therefore, it is not considered within the classic economic balance. This underestimating of the economic value of any natural resource - because it is under-priced or even not marketed, as in the case of fee free entrance to many national parks, is very recurrent. In addition, this situation helps to spread the popular perception that conservation does not contribute economically to the adjacent community or society in general. As a result policy makers could make decisions without considering this wide range of values. Therefore, entities such as government bodies should be those responsible for promoting these "a priori" incomes from intangible sources such as the profits generated by the conservation measures over natural resources used by ecotourism (Higginbottom, 2004). Further, the consciousness that animals are more important and valuable alive than dead is increasing

thanks to some activities such as cetacean viewing. This trend contributes to increase the non-consumption value of these species and supports the conservation efforts related to them and their environment (Filla, 2008; Kuo et al., 2010).

In fact, the values of the whale watching industry include significant educational, environmental, scientific, and other socioeconomic contributions (IFAW et al., 1997). However, amongst all of them, the most important outcome is the potential to educate people. Furthermore, this approach, which is focused on understanding the activity, generates another added value: the capacity to develop scientific research related to the conservation of the involved animals or ecosystems (Australian Government, 2009). This is only one example which shows the wide range of benefits that can be obtained from ecotourism initiatives. Here whale watching counts with recreational, cultural, aesthetic, spiritual and political values which are considered 'non-use values' (IFAW 1999). In other words, these values show the benefits of a sustainable use which reflects their potential for future generations. At the same time, it could become a new dimension to community identity (Australian Government, 2008), because of the increasing interest by the society. In this sense, this recreational value has also been useful to relocate those with more traditional maritime employment to the tourism industry. In 1986, when the whale hunting ended in a significant number of countries, all of these hunters had to find other economic alternatives. In this context, their background knowledge about the species and their ability to identify them were the best introduction for becoming marine wildlife tourism employees (Servidio & Elejabeitia, 2003).

However, the principle of addition, -so common in standard economic theory - is not applicable for natural resources because, for example, one (consumptive) use could decrease the value for another (non-consumptive) use, such as industrial fishing in a coral sea which reduces dramatically the quality of snorkelling in the same area (Tisdell & Wilson, 2002). Furthermore, in this economic scenario the wildlife tourism can be more profitable than producing commodities, especially in the long-term as it is more eco-friendly and more focused on services. Therefore, the non-use values of wildlife of some species exceed the use values. They are appreciated by their existence or contribution to healthy ecosystems or to society. However, when the animals are not considered from a commercial approach, their value is more difficult to be assigned (Australian Government, 2008). This situation

should be considered within development plans by managers and tour operators (Higginbottom, 2004).

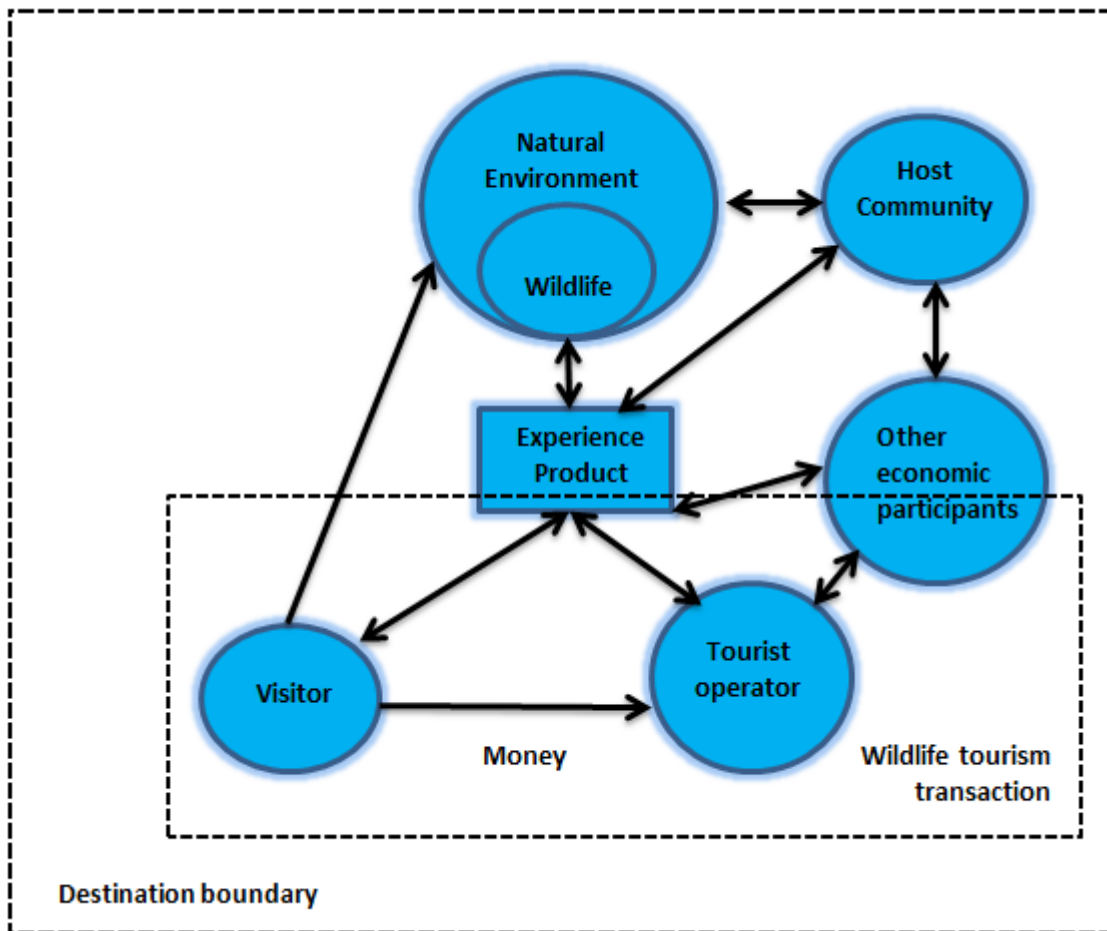
To sum up, this approach, which tries to incorporate all values of any resource meant a significant step forward to economic valuation techniques, although it was not exempt from limitations as Higginbottom (2004) noted. For this project, the direct use value of dolphin watching activity will be the only one analysed, although the explanations above have highlighted the fact that the result obtained only will show a small part of the economic effect of the marine wildlife in Cardigan Bay when it is used as a base for an ecotourism proposal. Once the economic perspective, where this project is located, is defined, the next step is to explain which types of economic incomes are used in this approach.

2.1.3 The potential changes due to the wildlife tourism

Economic valuation has an important role within decision making process of authorities. It is an increasingly powerful tool in order to manage the natural resources adequately. At the same time, these evaluation techniques allow the comparison of non - market goods and services (IUCN, 1994; IUCN, 1998). However, despite this recognition, it is a challenge for the financial field to incorporate the value of non-market environmental services in terms of sustainable development (Balmford et al., 2002; Gios et al., 2006). Therefore, as much for conservation field (IUCN, 1994; Chichilnisky, 2010) as for other stakeholders, valuing wildlife has become a cornerstone for the sustainable future of communities and their economic activities, including tourism (Higginbottom, 2004).

It is widely recognised that tourism is an increasing industry which is contributing significantly to the economy in many countries (WTTC 2000 cited in Higginbottom, 2004) because of its high ability to obtain employment and incomes (Filla & Oliveira, 2012). In this sense, the wildlife tourism system is of interest because of its capacity to generate a constant interaction among the different key players of this industry, as the below figure shows (Higginbottom, 2004: 258).

Figure 3: Wildlife tourism system



However, this wide distribution of the benefits is only possible as long as the tourism activity is operated under the guidelines of sustainability. Under this principle, nowadays, the triple bottom line of the sustainability is often central to tourism. This framework is based in the contribution to the conservation goals and the economic security of both operators and host communities (Shackley 1996, Fennell & Weaver 1997, Ashley & Roe 1998, Manfredo 2002). In the case of cetacean watching, it has been amply studied that the way to operate the tour is related to the generation of the benefits above mentioned; jobs; well-being for host communities; and the promotion of the conservation of the cetaceans and the environments in which they live (IFAW 1995 cited in Filla, 2012; Shea et al. 1997 in Higginbottom, 2004; Spradlin, et al. 2001).

However, sustainability in the sector has to be lead, among others, by the industry. For this reason several sustainable frameworks are available to be adopted by the tour operators.

Corporate social responsibility, ecocertification, and destination marketing are promoted but with limited membership (Ayuso, 2007; Buckley, 2011; Choo, 2011; Font & Buckley, 2001; McKenna, Williams, & Cooper, 2011; Priego, Najera, & Font, 2011; Sheldon & Park, 2011). One reason for this low participation is the natural tendency to self-regulation to avoid government regulation (Nunez, 2007). However, due to increasing environmental concern by the general public, the future of the industry may require acceptance of this type of framework. In this sense, the European Commission has recently designed the European Tourism Indicator System for Sustainable Destinations (Miller et al., 2013). This toolkit is a set of indicators to guide the industry through sustainable strategy. This process considers different key sectors such as social and cultural impacts; tourism supply chain; or the quantity and quality of employment.

Concerning the participation of the community, nevertheless, this link is still a challenge for this framework. Although the majority of concepts of ecotourism defend the fact that one of its distinctive characteristics is the commitment towards the benefits of community involved, this aspect is not guaranteed in all cases (Bookbinder et al. 1998 cited in Beasley, et al., 2010). However, although the local population is not rewarded from direct expenditure on tourism products such as whale watching trips, there may be flow-on effects of tourism such as in transport and hotels. Therefore, indirectly they can be impacted in positive manner.

Tourism based in nature has its main setting location in rural areas, as the natural resources or other tourism attractions are usually located in non-urban developments. Therefore, the leisure activity can bring economic benefits to these areas. In this sense, depressed regional economies can also be boosted by this increasing activity (McCool 1996; Fennell & Weaver 1997, Goodwin et al. 1998). The economic scenario generated by recreation is described by some studies with an employment of five times greater than that of resource exploitation in the same territory; and with gross economic benefits ten times greater (Higginbottom, 2004). Moreover, these rewards can engender more social outcomes, such as the generation of a sense of local pride and ownership (Brock 2002 cited in Higginbottom, 2004).

On the other hand, these outcomes provoke as a consequence significant changes in land use, shifting from exploitation of resources to the utilization of their services (Kruger, O. (2005). As a consequence, governments are being stimulated to acquire lands to manage and conserve by increasing the public interest in nature-based tourism (Higginbottom. K, 2004).

However, in regard to benefits in the conservation field, and the fact that wildlife watching is based on free-ranging animals, their vulnerability faces this increase of this economic activity. Therefore, it is not surprising that if the entrepreneurial philosophy does not follow sustainable principles, the impact on the animal's populations can be counter-productive (Green & Higginbottom, 2000). This can include changes to: their natural behaviour; patterns of migration and distribution; and the ratios of survival or reproduction (Filla, et al, 2012). In other words, overuse of the resource can put at risk the benefits in the long-term (Isaacs, 2000; Moore & Rodger, 2010). In many cases, these impacts are caused to certain rare or endangered species, (Hoyt, 2008), or those which are in vulnerable situation because of gross over-exploitation. As a result, wildlife watching is often operated with populations which already have a low number of individuals. At the same time, sometimes marine wildlife encounters are carried out at critical life history stages with complications for management, such as during migration, breeding, feeding, resting and socialising. In respect to cetacean watching, the number of boats and the amount of time spent interacting has a critical long-term impact on populations such as those in Doubtful Sound, New Zealand; off eastern and southern Vancouver Island, Canada; and Shark Bay, Australia (Bejder et al. 2006; Lusseau et al. 2006). These studies highlight the sensitivity of small dolphin populations exposed to constant whale watching, causing reduction of their genetic diversity because of significant reduction in calving success (O'Connor et al., 2009; Beasley et al., 2010). However, ecotourism can help to develop the opposite situation when a flagship species becomes the main attraction, and with good management can contribute to restoration of its population (Wells 1992 cited in Kruger, 2005). Even these flagship species can play a key role as landscape species, benefiting the entire ecosystem.

Therefore active management is the key strategy in this activity. Among the measures to mitigate intensive tourism impacts, two main types are usually adopted, one is to manage access, which is not popular among users, or to reduce the intensity of interactions (Tisdell,

2009). This latter option is more welcome among managers of protected areas however its results are difficult to assess because some species have long-term ecological dynamics. One of these species is the dolphin, who as k-selected species (i.e., slow breeder) needs more time to evaluate the positive impacts of this intervention (Mustika et al, 2012). Therefore for policy makers, these outcomes are often not suitable for their short-term social demands. Despite these limitations, it can be said, that if the economic assessment proves that this activity is beneficial for the local development, conservation strategies for the recuperation of these species will attract more advocates (Orams, 2001).

In conclusion, providing the balance among the tourism activity, the animal's well-being and local development can bring long-term benefits. Consequently, future sustainability for the area may be achieved. However, this trinomial is complex (Isaacs, 2000; Gowdy, 2000; Tisdell 2001, 2002; Higginbottom, 2004) and requires the commitment by all involved parts of the society in order to guarantee the well-being of the three main pillars: host community; environment; and the tourism industry.

2.1.4 Economic "snapshot"

Marine ecotourism endures the same economic constraints of every "alternative" tourism type. The majority of ecotourism operators are small businesses: isolated and lacking the financial resources to reach the marketplace effectively as Cater & Cater (2007) emphasises, where the main economic effort falls on owners' finances. Therefore it is no wonder some studies conclude that the percentage of unsuccessful businesses among this sector is high, as Hillel (2002 cited in Cater & Cater, 2007) indicates in the Brazilian context with an 80% rate of failure within the first two years. Likewise, the same economic endpoint happens when the ecotourism initiative is supported by funds, as Epler-Wood (2003) reveals with a 90% failure rate suggested by the study of French Global Environmental Fund ecotourism projects.

One of the reasons for this poor outcome is the fact that, in too many cases, the industry has to assume responsibilities more related to the public services which negatively impacts on their financial balance. For example, The Hassall report, a socio-economic assessment carried out in Douglas-Cairns in Australia in 2001, revealed that the extra investment made

by operators in such areas as education/interpretation; research; and infrastructure were contributing indirectly to the entire development of the region but with an extra-cost to the tourism industry of around Aus\$19m in 2004 (Mules, 2004) . Therefore, this situation was negatively affecting the industry's profits, impacting indirectly on environmental performance and social benefits (Cater & Cater, 2007). On the other hand, the sudden success of this "alternative" tourism provokes a rise in demand for additional labour force, resources, goods and services in general for the host destinations. This new situation usually leads to the displacement of the workforce from areas which lack labour opportunities or from areas which require skilled staff. This human resource flow leads to an additional pressure on public services because of the growth of the population. Consequently, this necessity of investment negatively impacts on the profit balance because of the increase of tourism demands, and requires government involvement as the main supplier of services. Likewise, this labour flow, which consists of outsiders as well as immigrants depending on the development stage of the tourism destination, could generate leakages from the local economic system due to "repatriated income" (out of the country or region).

Similarly, in this new economic scenario the opportunity cost should be included in the general invoice. As previously stated, tourism is an activity which usually shifts focus from previous economic activities which may conflict for several reasons: using the same resource, located in the same site or competing for the same public funding. Therefore, planners and decision makers should take into account this "virtual loss" because of the lost business opportunity. In the same vein, the displacement effect happens in every tourism destination when an offered service attracts new competitors. In this new situation of increasing businesses, the potential benefit from tourism should be shared among more "participants", subsequently, integrating this "profit loss" in true economic tourism picture.

In the same manner, with the aim of the continual development of the economic scenario of any tourism destination, the analysis of the demand becomes a key step in facilitating the adequate management of the destination and contributing towards guaranteeing the sustainability of its tourism flow. In addition, if the profile of the demand is associated with the expenditure behaviour, the economic prospects for tourism in the destination come down to a specific detail whereby a tourism spot is proposed, one which is more adequate regarding its target of social class.

2.1.5 The spending preferences of tourists during their holidays

In general terms, several authors support the fact that the specialist spends more money on their holidays than the generalist (Sekercioglu, 2002) but the amount varies significantly depending on the species (Wilson & Tisdell, 2003), domestic or foreigners, and type of tourism (e.g. birdwatchers). Moreover, the decision to go to some destinations and even to stay more time there is linked to the presence of wildlife (Higginbottom, 2004). In this sense, in order to describe this network of links between the tourism expenditure and its behaviour within the holiday destination, one of the significant aspects which should be taken into account is the relationship established between travel motivations with the level of expenditure of tourists. Furthermore, as Mok & Iverson (2000) underlined, this connection is the base for the strategic planning of sites, improving and adapting their facilities and amenities to required needs.

With regard to travel motivations, Mehmetoglu (2007), in his study of two nature-based attractions in Northern Norway, highlighted the fact that visitors with cultural curiosity showed less intention of expense than those who prefer “challenging nature-based activities” such as diving and snorkelling. The latter were classified as "heavy spenders". Therefore factors, such as accomplishment and achievement, were key elements which motivated to heavy spenders. However, although it is true that tourists' motives appear as a factor to be considered with regard to understanding the trip expenditure behaviour, according to the results of this study, its influence could still be limited. In regard to whale watching, it is understood that the ticket of boat trip is usually more expensive than the average trip. It is therefore expected that whale watchers have a higher budget for their holidays (O'Connor *et al.*, 2009). This classification about type of spenders was used by Spotts & Mahoney (1991), defining them as heavy, medium, and light spenders according to tourist expenditure. On the other hand, surprisingly, Mehmetoglu (2007) did not find any correlation between household income and tourist spending. This same study resolved that other key factors were affected significantly by the spending behaviour: travel party size, travel duration, trip purpose, attractions and activities during their trip. For example, it revealed that "heavy spenders" usually travel with children; for long periods in the region; are more active, taking part in more activities and visiting more attractions during their trip.

It also brought to light other interesting findings such as that the pure specialist (who are *only* interested in a nature trip) could show a financial behaviour similar to “light spenders”.

Another research study carried out in south eastern Arizona (Leones *et al.*, 1998) contrasts this last argument, supporting the fact that nature tourists have a greater propensity to spend more per party per trip in the study area than other visitors in the same area. Additionally, these findings show that the number of local attractions visited, shorter trip duration and the place of residence could have a positive effect on tourist expenditure. In this sense, the study carried out in Norway (Mehmetoglu, 2007) reveals the fact that the trip length had an influence on the trip expenditure, exhibiting light spending behaviour when these nature-based tourists travel for more than three weeks. Similarly, a study on recreational boating in Michigan (Lee, 2001) demonstrated a statistical degree of significance between variables such as spending and trip patterns (travel distance, type of boating activity, type of destination, and size of group). Another interaction in tandem was found by Mehmetoglu (2007) when the travel motive coincided with a group of variables such as trip length, trip purpose, age and household income which presented a clear influence over the daily expenditure of nature-based tourists although to a lesser degree.

On a specific issue, Downward and Lumsdon (2004) proposed the importance of the travel mode within the spending patterns. Their inquiries in a National Park context revealed that the tourist travelling by car is prone to spend more than those who use public transport. Mustika *et al.* (2012) also pointed out that dolphin tourists in Lovina preferred to rent a car to explore the area than travelling by public transport. Likewise, the group size and trip duration should be also taken into account to determine their level of expenditure. In addition, some socioeconomic characteristics also influenced the expenditure behaviour such as age or place of residence as Leones *et al.* (1998) affirmed. In this sense, Mehmetoglu, (2007) reached the conclusion that visitors, those above 50 years old, were usually light spenders. Lang & O’Leary (1997) considered that the nature-based tourist is well educated with high levels of both individual and household income, and a willingness to spend more. However, in regard to household income, Leones’s study showed a correlation with a level of tourism spending in the survey consistent with a boating trip, contrasting with the conclusions of Spotts & Mahoney (Mehmetoglu, 2007). The

contradiction in this key factor corroborates what this latter author recalled in his study of nature based tourism in northern Norway: this group should not be treated as homogenous; therefore surveys must be carried out in order to understand the spending behaviour. These surveys should be compounded by a minimum of four sections: socio-demographic characteristics (age, gender, income, etc.), travel choices (travel mode, accommodation etc.), travel motives; and activities chosen (Mehmetoglu, 2007). This structure is associated with literature which suggests that tourism expenditure is related to socio demographic factors (e.g. age), trip characteristics (e.g. trip duration), and psychographic dimensions (e.g. travel motives) (Mehmetoglu, 2007: 213).

Summarizing, tourism expenditure is influenced by a wide range of factors which can be a guide to the expected level of spending on the destination. However, with regard to wildlife tourism, different economic techniques have been used in order to estimate the potential economic value generated.

2.1.6 Investing in nature-based industries

Initially, the main aim of these economic estimations has been to contribute to policy making through the proper use of the natural resource:

It is only by understanding the basic economic problem and the purpose of economic valuation that one can appreciate the purpose of the economic techniques developed for valuing wildlife and other natural resources used for tourism or outdoor recreation. (Higginbottom, 2004:154)

Methods such as the hedonic travel cost method (Brown & Mendelsohn, 1984; Ward & Beal, 2000) or choice modelling techniques (Hanley *et al.*, 2001; Bennett & Blamey, 2001) have been developed for this purpose, utilizing them as ‘the revealed preference value’: by asking tourists about their choices (King *et al.*, 2009), building the demand function referred to this activity or destination. Despite this, the choice modelling techniques are far from perfect for economic valuation; some of them such as the Travel Cost Method (TCM) or contingent value method enjoy extensive literature and popular support among technicians as an assessment of the value of this industry based on natural resources or ecosystems. In this sense, the TCM, as a declared preference method, is applied by putting an economic value on the elements of nature which are used in leisure or outdoor activities, basing this estimation on the cost of travel (Filla, *et al.*, 2012). This method assumes that the greater the

distance the more the expenditure by the tourist and a lesser frequency of visits. Therefore, through the so called trip generation function, the price of the location could be estimated according to the frequency of visits, whose value is represented in different zones around the tourism destination. According to Sebold & Da Silva (2004), TCM needs to access data from at least two years to establish the proper value of the environment, a requirement which can be a limitation in many studies with a smaller data base. When the analysis refers to only one species, this assessment could be employed for another variation of this type of willingness estimation called the contingent valuation method (Higginbottom, 2004). This approach involves asking tourists how much they would be willing to pay for specific services by surveys.

Both methods show the touristic economic value of wildlife in a particular site but taking into account all of the implications; this price will always be less than the whole economic value of these natural resources. Therefore, it is necessary to approach this challenge through a methodology which allows exploration of all economic ramifications which are generated by any economic activity. Therefore, in spite of this financial information unfolding about the true or potential expenditure behaviour of tourists, it is not enough to show the true economic value of the wildlife tourism, as was already explained by Bishop (1987). The scrutiny should go deeper to illustrate the all of the ramifications that tourism generates.

2.1.7 A cascade of economic impacts

Expenditures are common economic measures in understanding wildlife tourism. An initial economic input is usually examined in two levels: direct expenditure and indirect expenditure (Hoyt, 2001; O'Connor *et al.*, 2009; Orams, 2002). In a marine context the direct expenditure in this industry often encompasses the ticket price of the boat trip from which the costs related to the boat are deducted in order to calculate the direct gross returns of tourism (Samonte-Tan *et al.*, 2007). In fact, this item, the sale of the boat trip ticket, has been the core of economic impact studies on this activity for a long time, appearing to be the only significant financial inducement in most existing research (IFAW, 2004). However, there are a few studies which have analysed the rest of the economic chain involved in this activity, although it is well-known that the whale watching activity is generating income,

jobs and economic benefits in host communities (Ris, 1993; Mazzanti, 2001; Parsons *et al.*, 2003; IFAW, 2004; Larson *et al.*, 2004). Therefore, it is important to research the associated expenditures for this economic activity in this type of analysis, this being one of the aims of this study. In this sense, it is the indirect expenditures which are treated by some economists as part of the economic multiplier effect: spending made by the businesses which belong to the supporting system like accommodation, food, souvenirs, etc. (Duffield, 1982; Dwyer *et al.*, 2000; Orams, 2002; O'Connor *et al.*, 2009). However, others consider that these outlays are part of the activity, and therefore, they should be analysed in the same first expenditure layer (joint with direct ones) although they are considered indirect payments (Cisneros-Montemayor *et al.*, 2010; Hoyt, 2001; O'Connor *et al.*, 2009). In order to avoid generating any confusion, for these latter expenditures, the concept called "auxiliary direct expenditure" is also used, as was described in an economic project about dolphin watching in Lovina north Bali, Indonesia. In this case, the price of ticket would be "the primary direct expenditure" (Mustika *et al.*, 2012). For this project, the direct expenditure consists of the primary + auxiliary direct expenditure.

To sum up, facing these potential profits, it is crucial to understand how the economic flows work as a monetary cascade: part of the flow feeds back into the local economic system through consecutive expenditure rounds, while the outsiders of the system contribute to leak part of this economic contribution. Consequently, it is appropriate to highlight that the capacity of building linkages within an economic network of an area becomes a key factor to minimize these losses inside the local economy (Milne 1987; Kontogeorgopoulos 1998). In other words, the volume of imported goods or services has a negative influence on the strengthening of this crucial local structure.

2.1.8 Testing the strength of the productive network. "Gaps" in this cascade

Nowadays, it is a well-known fact that tourists positively value local products, such as souvenirs made locally: "products with added value". Therefore, the backing of the local structure is supported by the new consumption habits of tourism. Unfortunately, in this respect, there is a rule of thumb: 'The smaller the economy the fewer are the linkages between firms and the greater is the likelihood that replacement orders and purchases of new machinery will be given to firms outside the area' (Archer, 1982:237).

This hypothesis becomes more evident in specialist tourism destinations such as marine wildlife activity where skilled staff and specific equipment is required, particularly when the activity is carried out in rural areas. Likewise it also happens when the destination is reliant on a significant level of wealthy customers, who usually demand higher quality in the goods and services, these being luxury products which could generate more leakages inside the local economy. At the other end of the spectrum, the caravan site is one of the most popular forms of accommodation in the UK as Archer already pointed out it in 1982. However, the positive economic impact from their rents does not remain inside the local economy because most of the owners of these caravans live outside the area. In the same way, package tours usually use outsider services such as coach operators, tour companies or travel agents, consequently a significant portion of the tourism spending never feeds into local economic network. This situation arises because of chronic limitations suffered by the local entrepreneurs which restrain the local-production stream: lacking capital (Forsyth 1995; Cheong 2003); training (Fuller *et al.* 2005); and experience in running tourism businesses (Holder 1989; Tosun 2000; Nyaupane *et al.* 2006); and proper understanding about management and marketing decisions (Holder 1989; Torres 2003). Such a common situation in rural destinations is reflected in the economic leakages which occur during the tourism activity. In this sense, it could be summarised that these leakages are a product of factors related to demand, supply and market (Lacher, *et al.*, 2010), as shown in table 4. These main categories are clearly explained by Torres (2003)

Table 4: Economic leakages in tourism activity

Supply-related factors:	<ul style="list-style-type: none"> Lack of local production of types of food demanded by tourists Lack of high-end or value-added products Price of local products is too high Necessary natural resources are increasingly rare
Demand-related factors:	<ul style="list-style-type: none"> Tourists' preferences for familiar products Tourists' desire for cheap products Seasonal variation in demand
Market-related factors:	<ul style="list-style-type: none"> Locals' inexperience in marketing Locals' failure to co-operate with one another Locals are unable to purchase from large wholesalers Locals cannot educate themselves in marketing techniques Locals' inability to create strategic alliances with tourism industry Local producers' inability to provide receipts Poor local infrastructure results in difficult transportation

Source: Lacher *et al.* (2010:82)

All of these factors test the capacity of local structures to supply these different demands, provoking some gaps (leakages out of local economy) which should be plugged with the strengthening of linkages among all tourism key players, buying and hiring staff locally. In this line of argument, that is plugging these gaps in the local economy, there exists a series of measures to involve the local community in the sector (Lacher, *et al*, 2010): local ownership helps to have control of the size of firms and contributes to avoiding enclave tourism because of its tendency to integrate the whole territory through local linkages; and relying on domestic tourism and/or promoting backpackers and other alternative tourism.

With these strategic decisions, it is expected that a higher responsibility with regard to the destiny of the tourism activity in the rural area is generated (Lepp 2008; Brohman 1996; Scheyvens 2002). In this sense, this decision making process should take into account a concept called the opportunity costs which means 'the best alternative sacrificed for a chosen alternative' (Layton *et al.*, 2009:37). This economic indicator shows whether it is a good decision to shift from traditional activities to tourism. Marine wildlife tourism is usually carried out in peripheral areas where the local community works in agriculture or the fishing industry, therefore involvement in this new activity requires being aware of what are the associated economic implications. First of all, these two activities are going to compete for land, labour and natural resources (Telfer & Wall 1996). As a result, in the beginning, the local production can be affected, increasing the price of this input (Torres 2003), but at the same time, this change could be an opportunity to diversify their target group, extending their market with sales to the tourism recipients (Cox *et al.* 1995).

Once the importance of having a strong local economic interplay has been understood, the next step is to measure the economic value of this decision for the entire region, analysing the monetary flow which is generated within the local economy. In this vein, the economic multiplier effect method is revealed as the proper assessment tool.

2.1.9 The multiplier effect and economic impact

The economic context of tourism activity is defined by the multiple-factorial dynamic which describes a complex picture. In other words, tourism is an industry which encompasses

multiple economic activities and generates different social and environmental impacts, being difficult to assess within classical economic methods of analysis. Economic studies could contribute in different ways to an analysis of this complex tourism picture in any destination. Among them, the most significant approaches are those whose aim is to manage the resources according to welfare economics, taking into account the value of the wildlife for tourism or other purposes (Higginbottom, 2004). And also those research studies which estimate the economic impact of tourism expenditures on incomes and employment. In this sense, two elements can be identified as bases of this economic system: tourism expenditure and development of tourism. The latter one is analysed through estimations of economic impacts of the project such as cost-benefit method whereas the former one is scrutinised through the multiplier effect analysis (Fletcher *et al.*, 2013). At the same time, the analyses which predict the demand of wildlife tourism are also useful to create the economic tourism scenario.

In regard to the concept of multiplier effect, this is based on idea that the economic activity is developing further where businesses are creating commercial relationships. The output of one enterprise becomes input for another venture. But this exchange implies far more than goods or services. In each “exchange” the economic system is mobilised implicating the whole supply network of this sector and adjacent sectors. Therefore, any injection of money stimulates the entire structure, generating impacts in the levels of production; household income; employment; government revenues; and in some cases foreign exchange flows (Fletcher *et al.* 2013). In other words, every economic activity generates a monetary flow and the technique to measure this ripple effect of spending through the economy is called a multiplier model. In successive rounds these flows of money become “output” and “input”, activating the different economic strata until the leakages absorb the multiplier capacity of this flow. In this activation, “the front-line” businesses will be the receptors of direct impacts and the following expense rounds generate the indirect and induced impacts as a cascade phenomenon (Fletcher *et al.* 2013). This means that this impact could be less, equal or bigger than the value of the original tourism contribution, because the tourism multiplier effect measures the ratio of two changes. On the one hand this ratio varies through a key economic variable such as income, employment or

government revenue and on the other hand the change in tourism expenditure (Fletcher *et al.* 2013: 155).

Within this economic assessment method there are different types according to the ratio of change considered. Transaction or sales multiplier refers to the increment in business revenues involved in the economic sector subject of monetary inflection. Output multiplier measures the change in production level after injecting new money from economic activity. Rather than studying sales, this analysis focuses on fabrication of goods or creation of services. Income multiplier takes into account the additional income (wages and salaries, rent, interest and profits) as a result of the variation in tourism expenditure. This income can enter the local economy circulation or remain immobile as savings. For that reason, this revenue could be considered “disposable income” (Archer, 1982; Fletcher *et al.* 2013). Or employment multiplier measures the impact of the staff hired to provide the service in demand.

Multiplier effect ratio variation depends on three factors which determinate the size of its value: patterns of customers’ expenditure; the nature of an area’s economy; and how the commercial linkages are established within the economic network (Archer, 1982; Fletcher *et al.*, 2013). Similarly, the methodology used is another key element to understand the ratio obtained from multiplier effect analysis. On the whole, output-input models higher multiplier effect value than other models such as ad hoc (up to 30% of difference) and Computable General Equilibrium (CGE) (Dwyer *et al.*, 2003). This variation is due to two assumptions mentioned above: full capacity of the industrial network or constant market equilibrium (Fletcher *et al.* 2013). With regard to types of multiplier effect, income multiplier is the most suitable approach to take a snapshot of a specific economic situation rather than seeing the same “picture” through business turnover (outcome multiplier). How the incomes of householders increase through the growth of economic activity is more influential for policy making and planning purpose (Fletcher *et al.* 2013). It is common to try to compare multiplier effect ratios to extrapolate trends. This process should consider some issues in order to avoid reaching wrong conclusions, lessons learned from experience after carrying out multiplier effect studies since 1960s. In this sense, it is worth highlighting that the value of economic impact does not necessarily increase as the economic development does or it improves as their sectorial linkages do.

Another generalization or common rule is that the larger the economy the higher the multiplier effect, based on the premise that the large economy has more capacity to build up strong commercial inter-sectorial linkages among whole economic agents of economic circuit. It is likely to expect that a stable economy needs less import goods and services than an undeveloped economic structure. However, as with every methodology it is important to examine their strong and weak points. This is because all these multiplier effects, which are described above, are calculated by different methodologies. And although having been the subject of significant improvements through numerous studies, they are still characterized by inherent weakness and limitations. For understanding these particular restrictions it is important to conduct a historical review of the path of multipliers as methods of economic measurement.

2.1.10 The journey of multiplier effects and their different types

The first steps were recorded from the 1880s to the early 1930s, but it was in 1931 when R.F. Kahn developed the concept with a significant contribution to the theory, and influencing methodology since then (Archer 1982). He was the first to illustrate how the income, employment, consumption and investment can raise and extend with an increase in the exportation (Archer 1982). Multiplier models can be divided into: Base theory models; Keynesian multiplier effect; ad hoc models; input-output analysis; and computable general equilibrium (CGE) models, which are approaches to take into account (Fletcher *et al.* 2013). The Base theory model is rarely used these days. Their simplistic assumptions do not allow consideration as a suitable method to work out the multiplier effect ratios. The main convention is that any export activity is connected firmly with a local sector, thereby the local impact being easily estimated. Due to its oversimplified formulations, this method has become disregarded somewhat. The economic picture is a complex backdrop which needs to be dealt with in more sophistication. Archer already classified in 1982 two different types of multiplier effect ratios: those whose linkages were strongly developed within an agricultural or manufactured based economy such as Dominica, some Indian Ocean islands or Hong Kong at that time; and those whose advantages lie in the high added value which tourists receive in goods and services. The latter described places such as Bermuda or the Bahamas.

The Keynesian multiplier model was another attempt to calculate the economic impact (income created) caused by an additional unit of tourism expenditure in the local economy (Fletcher *et al.* 2013). In fact, it is considered the main link between Kahn's work and the current advanced models (Archer, 1982). Therefore, the development of this method is recorded as the first rigorous approach. In the specific case of the UK, this same author recognizes that a local Keynesian income multiplier of nearly a unit was difficult to reach at the end of last century (Archer, 1984). According to some local research studies from these times (Henderson and Cousins 1975 cited in Archer 1984: Archer 1977), the value was around 0.25 to 0.50, with a Keynesian income multiplier for the whole of the UK of between 1.68 and 1.78 (Richards 1972 cited in Archer 1984). By the same token, Archer did a comparison between the USA and UK and the result was favourable for the American country: the UK areas have lower multiplier values than US states and counties (Archer, 1982). This value reflected the weakness of the British economy creating linkages among their production sector without resorting to exports. However, although the most advanced version of Keynesian multiplier was implemented, it would still be too simplistic for use as policy maker decisions. A noteworthy advance was the formula developed by Archer in 1976 which considered only the leakages referring to savings and imports, measuring just short-term effects. Afterwards, the long-term effects were incorporated with the improvement in a new more complex version. Marginal propensity to invest; marginal propensity of the public sector to spend; marginal rate of indirect taxation; the marginal rate of transfer payments were the new contributions to the basic mathematical formula (Fletcher *et al.* 2013). Despite this effort to integrate the economic multifaceted reality, the impact created by the sectorial linkages and leakages out in each round of transaction are not recorded adequately. Furthermore, this model treats all sectors in an identical manner, homogenizing the economic reality (Fletcher *et al.* 2013). Therefore, these methods are not still suitable for policy makers. To achieve this aim, ad hoc models emerged in order to supply this management demand. The key difference with the last method is that this one treats each sector individually. In this methodology, the propensity to consume locally by residents was taken into account (Fletcher *et al.* 2013). In addition, other factors such as pattern of consumption; the type of business; and marginal propensity to consume were analysed in the advanced version of the model developed in the early 1970's (by Archer & Owen, 1971). This multiplier equation shows the direct and indirect effect of additional tourism

expenditure in an economic circuit. However it was still unable to calculate the induced impacts as a complete multiplier effect method must do. This analysis is commonly used in economic contexts such as the USA, United Kingdom, South Pacific Islands or the Caribbean (Fletcher *et al.* 2013).

The second thrust in the evolution of multiplier models was led by Leontief in USA in the 1960s with the leap to the next specialization level: the disaggregation inter and intra sectorial within measurement (Archer, 1982). His model called input-output analysis became the adequate framework to establish the impact in the economic weave as a result of a change in demand. The accounts are scrutinized through a table with inflows and outflows of capital in order to show the sales and purchases. Likewise the matrix of inter/intra industrial transactions are made more visible as well, distinguishing between intermediate and final demand. This analysis model requires very detailed data with regard to the transactions as Archer *et al* (1996) already emphasized twenty years ago: commercial exchanges among economic sectors; and in each sector about purchases of imports, payments in the productive level, their employment rates, sales among links of industrial chain; exports; financial performance of the public sector; and patterns of domestic consumption. In the tourism sector this breakdown is treated as an export column (Archer, 1982) and is usually formed by categories related to expenditure of tourism such as country of residence, accommodation used, and so on (Archer *et al*, 1996). As in the previous models, this approach has been subject to some advances in order to improve its capacity to make economic predictions. In this regard, the import row became more complex, incorporating a specific matrix where imports are classified according to grade of competitiveness. This distinction is crucial for further extrapolations due to the fact that the non-competitive imports are more predictable than competitive imports (Fletcher *et al.* 2013). The trade-off between domestic products and competitive imports in each sector are also examined.

Similarly, employment can be analysed sector by sector, considering their minimum skills or educational requirements in order to estimate the demand for short-term human resources. This type of analysis allows planners to design the training plan for each area. Although this model is the most competent framework for multiplier effect approach, some critics are still tarnishing its effectiveness. The restrictive assumptions, which are required to apply it, are

at the same time the most important limitations to overcome (Fletcher *et al.* 2013). This model has to assume that there are not any supply barriers, therefore in its estimations a tourism demand increase will always cause a rise in business supply regardless of any lack of good stock, industrial production capacity or skilled staff. These factors, so common in any economic context, can generate an inflation situation where some demand tourism products or services should be imported. Consequently this type of situation is engendered by static models; the challenge to becoming a dynamic model therefore must be addressed.

Hence, the following conventions from static models must be transformed (Fletcher *et al.* 2013). Firstly, production and consumption functions are linear and the inter-sectorial expenditure patterns are stable. This assumption provokes anomalies produced by the use of the average instead of marginal production coefficients which change in accordance with the dynamics of large-scale economy or the stabilization process of the production. Secondly, all sectors are able to meet any additional demands for their output. This question is solved with the supposition that every sector uses the average technical coefficient, establishing a linear homogeneity in production. And lastly, relative prices remain constant. To avoid this generalization and other limitations, the Computable General Equilibrium (CGE) was developed. The CGE model which was built based on Input-Output (IO) and Social Accounting Matrices (SAM), frameworks developed in 1970s, incorporating the behavioural responses of economic (production and consumption) agents when a variation into prices was occurred. Its incursion into the tourism sector dated from the latter part of the 1990s. Among the virtues of this approach was that it highlighted the study of the alteration in the supply system due to the fact that changes in their outputs allow resources to be allocated from one economic sector to another. At the same time, a wide range of sources such as tax, price inflation, interest rate, exchange rate changes and so on can be analysed (Fletcher *et al.* 2013).

In general, it can say that the CGE model was a substantial improvement within input-output frameworks, giving rise to its dynamic characteristic. However, some limitations are still defining this type of economic analysis: vast data requirements which are not available in the majority of circumstances. Reliable data is really difficult to find and its production for the analysis is not worth the cost, especially on a regional or local scale. Therefore, certain assumptions related to price elasticity of demand or substitution propensities for example

could result in inaccurate results. At the same time, CGE is based on the fact that economies always behave in the same fashion, in equilibrium at all times. It entails a dangerous premise due to the unemployment situation in many economies, or the lack of capacity of some sectors which are not taken into account. Furthermore, according to some authors as per Miller (2002) and Cooper & Wilson (2002), this method shows some restrictions when it is tested by statistical verifications.

To sum up, the assumptions which should be applied and the necessity of reliable data are the main responsible factors for making these methods weaker. This is because, as Archer already pointed out in 1982, the accuracy of the results depends on the adequacy of the data. However, these restrictive assumptions are confronted every time with new functions in order to move forward in the guarantee of more accurate estimations. Nevertheless, as a result of these limitations, the multiplier effect generated controversy among specialists during the 1970s as a method to analyse the economic impact of a variation in tourism expenditure inside the local economy.

2.1.11 Critiques of multiplier effects

By the 1970s, it was considered that multiplier techniques were “no useful guideline to policy makers as regards the merits of tourism compared with alternatives” (Bryden, 1973:217). However, numerous studies have demonstrated the opposite: the multiplier effect method manages to translate what is happening in a specific short-term economic context into clear language for policy makers. As Archer already explained in 1982, this technique measures the present economic performance under the effects of short-run adjustments due to a change in tourism expenditure. Furthermore, although the multiplier effect does not as a priority manage the allocation of resources, Diamond (1976) proved that this method can contribute efficiently to it. Likewise, input-output or CGE models can identify valuable information about economic structure; the degree of the inter-sectorial linkages within economy; supply limits; and capacity of labour and capital in each sector (Fletcher *et al.* 2013). In more detail, this type of analysis are appropriate for studying the public and private investment in the tourism sector; estimating the requirements which will be demanded according to productions, labour needs or facilities; and making comparison among effects of economic impacts because of the tourism expenditure increase. At the

same time, these analyses are useful to drive tourism expenditure based on target market segments.

For every reason, the information provided by the multiplier effect can be considered valuable to policymakers and planners. In fact, as Archer (1982) concluded some decades ago, despite weaknesses and limitations the multiplier analysis is a powerful and valuable tool for analysing the impact of tourism, but, only if the examination is conducted during the short-term. This technique cannot be suitable for examining the economy in the long-term. The argument to support this statement is based on its difficulty to incorporate the complexity of economic scenarios such as changes in consumer patterns or the different elasticity of economic factors. For example, this analysis treats all factors of production as having zero opportunity costs to society (Archer, 1982:240). Therefore, this exploration does not clarify if the tourism is the best economic option for the host society or not. In other words, it cannot be used to estimate the economic future for a region.

At the same time, it is important to point out some misleading uses of multiplier effect analysis in order to improve their application in economic studies. The oversimplification is another issue to take into account. Many assumptions are related to this necessity to make the reality simpler in order to apply some economic models. For example, the axiom that successive rounds of income generation follow a common path as these techniques usually demand, should be removed, especially when the smaller contexts are studied. Another premise which should be rejected is related to the apparently linear relationship between increased output and generated inputs in all sections of the economy: the so-called elasticity of supply (Archer 1982). This assumed correlation is disturbed by the inability of supply system to provide these additional goods or by the technological issues among other factors. In other words, the elasticity of prices and incomes related to demand and supply; relative returns on investment within dynamic capital markets; and the effects of changes in interest and foreign exchanges rates should be calculated (Fletcher *et al.*, 2013). Likewise, the grade of the operational capacity of each sector should be considered due to its strong influence in the variation of the price of resources and its cascading impact inside the supply network.

Similarly, it is important to notice that these models could become expensive and time consuming frameworks because of the intensive requirement of data: the lack of data is the common scenario for researchers at regional or local level; therefore the studies must involve large-scale surveys. Consequently, this task is one of the assignments which consume the most time and resources among researchers. The studies have to face a blank slate which has to be filled as at least a “population count” of each sector to build the basis of a significant sample (Archer *et al.*, 1996). Sometimes large businesses such as retailers or wholesalers conduct these surveys, even at regional level, and some banks or other saving institutions also do this task. Therefore, this base line is created without any extra cost for the project. Tourism is an activity which involves multiple sectors; therefore its data collecting process could be complex and inaccurate. In view of this multi-faceted reality, the tourism expenditure surveys should include categories referring to accommodation, meals, beverages, transportation and shopping as general items (Fletcher *et al.* 2013). This capacity of disaggregation is determinant to reach the expectable quality of analysis, becoming a common challenge for input-output frameworks for example. In this sense, in regard to a key area as the data demand is and as was mentioned above: the accuracy of the results depends on how well the model has been specified and how sensitively the results are interpreted (Archer, 1982). In fact, this same author later (Archer *et al.*, 1996) defined as “massaging” or adapting the current data, when researchers have to resort to “alternative methods” to gain the required information. Unfortunately, these circumstances are too frequent.

Therefore, when the research scenario is not favourable for implementing the multiplier effect methodology, other techniques in order to work out the tourism revenue must be considered such as the contingent assessments (e.g. willingness to pay); travel cost methods; or direct spend method. All these non-market valuations, especially the last one, direct spend method; contribute to understand the economic impact of a destination or a non-consumptive activity (Anderson *et al.*, 2011; Clua *et al.*, 2011). In this sense, according to Wood & Glasson (2005), it is important to point out that direct spending can only provide a very conservative economic value of estimated natural resources. Indeed, it is understood that this direct spending could be treated as the substitution value as was done in the study of whale shark tourism described by Catlin *et al.* in 2010.

In this same way, a new economic method emerged in 2000 supported by the World Tourism Organization called “Tourism satellite accounts” (TSAs). TSAs do not measure the impact of this activity in the whole economy; their aim is to work out the importance of Tourism within the national economic balance. They are not based on input-output models but from the demand-oriented approach (not from supply-oriented approach which is the usual). While the multiplier effect models have as the main objective to establish the economic impact of a change in specific economic situation, TSAs are revealing the significance of this change in this economic scenario. However, independently of which type of method is implemented, the “dedicated field survey” could make the difference as happened in studies such as that of Cagua, *et al.* (2014) which was carried out in South Ari Atoll, the Maldives related to the economic effect of whale shark tourism. The direct expenditure was calculated through 224 surveys during a year (from November 11, 2011, to December 31, 2012) showed a benefit of US\$7.6 and \$9.4 million for seasons 2012 and 2013 respectively, in the South Ari Marine Protected Area. This estimation was based on 72 to 78 thousand tourists who are involved in whale shark excursions annually. However, it is significant to mention that these results came from the calculation between numbers of passengers on each whale shark watching boat (which number was obtained by counting through binoculars) by the price of the particular tour. This direct expenditure assessment did not contemplate the spending related to the entire experience such as accommodation or travel expenditures as this research study considered in New Quay.

2.1.12 Going to local level to get the data

On a broad level consumption patterns are usually available from numerous household expenditure surveys at national level. Conversely, the specific performance of consumers is more complicated to obtain. Similarly, Archer also points out how difficult it is to identify all direct import leakages within household spending, such as vacation or education abroad. Fortunately, nowadays nations are making a huge effort to obtain tourism data annually, seasonally, even monthly. In the tourism sector, it is well-known that all countries where this economic activity as an important activity for national economy carry out annual statistic studies on the tourism dynamic in their territories. In the UK for example, the International Passenger Surveys (IPS) and the Great Britain Tourism Survey (GBTS) are

conducted. These studies usually are made on a national scale, on rare occasions on a regional scale and are far less related to local extents. At the same time, these databases are not suitable to apply methodologies to assess the impacts due to the fact that these tourism expenditure figures are shown without the leakages or collateral effects of this spending (Fletcher *et al.* 2013). In addition, although the domestic tourism is more significant than international tourism, this latter is easier to assess: using data from arrival points or other exits. The most effective method to gain valuable data to analysis the impacts is through specific visitor expenditure surveys.

In the same way, another distinctive characteristic of tourism activity which makes its examination and analysis more difficult is the multiple purposes of tourists. This variety in each journey is represented by tourism expenditures which can be tracked on a wide range of businesses. Tourists demand food and beverages, accommodation, transportation, entertainment services, retail goods, etc. This flow of money could be considered an injection demanded from outside. However this economic stream is not the only one generated from tourism activity, it's only one piece of the puzzle. The big picture is completed by other impact factors: leakages within local economy; indirect and induced effect; and displacement and opportunity costs.

As a result, all of these elements give support to the idea that it is more suitable to make the analysis at local level in order to try to avoid the misunderstandings of generalizations and to define with more detail the specific economic dynamic in each destination. And, in turn, because the multiplier effect analysis allows the calculation of the indirect and induced effects mentioned previously through the gained detailed data (Catlin *et al.*, 2010). However, the type of method will depend on the characteristics of the study. Nevertheless, at a survey level, it is more crucial to take into account the different details which form a tourism experience in order to avoid the errors which could start to accumulate. This usually happens when the breakdown is not calculated with the level of detail required. For example, one of these is not to show data according to the type of trip, such as pre-paid package tour or independent traveller. This classification is vital to identify how much of the holiday expenditure never entered into the local economy. In this sense, Archer *et al.* (1996: 706) clarified that it is pertinent to ask package tours visitors:

“How much they spent per person on buying the complete package, what the package includes, as well as how much they spent in the country itself after arrival. Subsequently, the local (national) element of the package could be deduced later consulting tour operators and hoteliers “.

In the same way as above, in order to try to avoid errors on surveys, it is important to note that the number of people to whom the expenditure is related and, the number of days covered by the expenditure make the difference in the results. So, this information should be included in surveys. In addition, to avoid the overestimation, the tourism expenditure, which is not related to the natural resource, must not be included. Therefore, the reason for the trip or the lengths of stay is some of the key factors within these economic assessments (Cagua *et al.*, 2014). These examples give only a clue how detailed the data collected should be to be able to apply the multiplier effect method.

Once the different aspects of economic impacts studies have been shown, their implications, barriers and limitations and potentials, it is time to choose a type and examine it in depth.

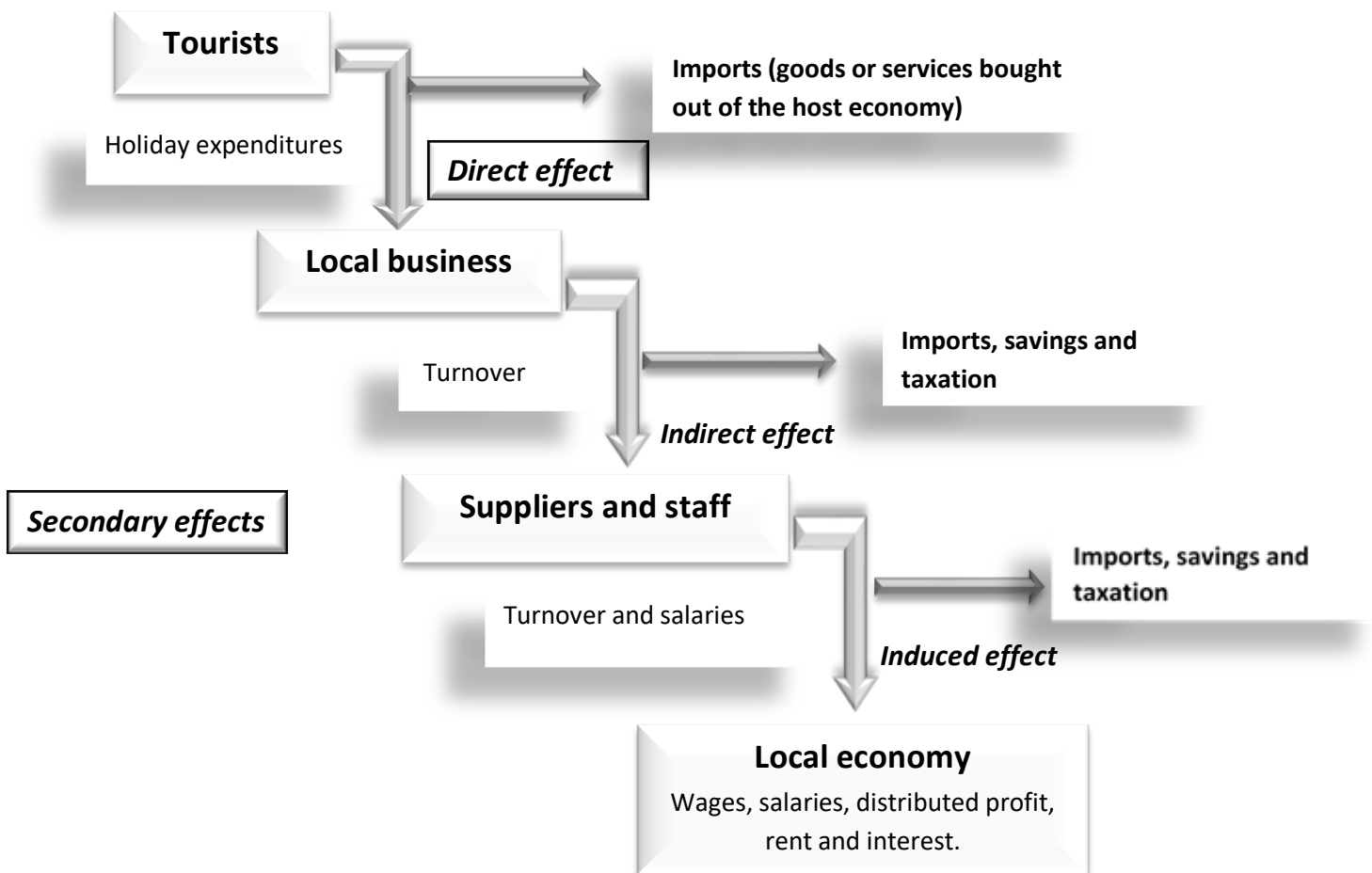
2.1.13 The multiplier effect method

This project is carried out using the sales multiplier as a main method. This is because of the fact that the element chosen for moving the entire economic system is the expenditures of tourists in businesses networks - buying goods and services. Likewise, the income and employment multiplier were also considered because of implications in the household income and the local employment rate during the third round of spending. This type of multiplier effect works in detail as follows: the direct effect shows the impact of the value of this starting amount minus imports (goods or services bought outside the host economy). In the subsequent round, the first line of receptor businesses spends their turnovers on their suppliers, generating the indirect effect in the local structure. In this stage, imports, savings and taxation should be deducted from this monetary flow (Fletcher *et al.* 2013). As Archer (1982) underlines, this layer of local commerce serves as a dynamo to activate other economic chains inside the entire local network: increasing the employment opportunities and personal incomes, as long as there are enough resources to support this growth. The third round involves the consumption habits of local residents associated with this local business network. These so-called induced effects measure the economic impact related to

wages, salaries, distributed profit, rent and interest. How this money is re-invested in the purchase of new goods and services determines the “health” of the local economy. In 1982 Archer already highlighted the capacity to multiply the economic effect of introduced output in this third level, being up to three times as great as the indirect effects alone in some areas.

These last both effects, indirect and induced, are considered as secondary effects (Archer, 1982). Therefore in the tourism sector, the multiplier effect measures the total effects (direct plus secondary) generated from additional tourist expenditure (Archer, 1982).

Figure 4: Tourism monetary flow



Local production; local work force; entrepreneurial skills (wages, salaries and profits); and government taxes, licences and fees benefit from this expenditure cascade as figure 3 points out. In this sense, two particular elements must be clarified. Firstly, the imported goods take on values associated with the distributive trade, importation, transport, local taxes, among

others. Therefore their consumption gives rise to a flow of money. However, all of these contributions to the local economy are not enough to pay the full cost of the imported product. And lastly, the returns from outsider activity should be excluded from this economic picture because it cannot be treated as local benefits. However, in the same vein, the non-national incomes for example from emigrants which are re-spending within the economy can be included in the calculations as secondary economic effects (Fletcher *et al.* 2013).

2.1.14 Multiplier effect method in tourism context

When this model is applied to wildlife tourism the multiplier effect based on tourism expenditure usually reaches around 2 (Filion *et al.*, 1994). This result is an interesting indicator of the economic performance of the activity but it does not represent the net economic benefit or net economic value (Higginbottom, 2004). In fact, it is necessary to highlight that although this economic indicator, income and employment, could be large, its effect within the local economy could not be to the same extent due to the fact that these expenditures could have been made out of the region. Therefore these leakages would limit the expected socio - economic local benefits. Consequently, the policymakers have to consider this common situation when they interpret this economic data, as it is a common misunderstanding (Higginbottom, 2004). Indeed, these multipliers usually reach much lower levels than national or global multipliers due to the “economic leakages” mentioned above which are typically higher in peripheral regions (Higginbottom, 2004) and small economies, than in central regions and large economies. But at the same time, it has been demonstrated that the wildlife tourism can be used for stimulating the economy in depressed and remote regions (e.g in Xishuangbanna, Yunnan Province, China and Cape York Peninsula, Australia, according to Tisdell in 2001). However, in the face of this positive economic perspective it is important to think about some interpretations derived from some multiplier effects. This is the case of studies based on the employment multiplier effect. It is well-known the attraction for employment ratios which policy makers and planners profess because of its political and social returns, therefore it is worthwhile showing the complexity of its analysis.

First of all, due to the seasonality of this economic activity, it is usually difficult to obtain full-time employment for locals (Farver 1984; Keith and Fawson 1996; Seckelmann 2002) (Lacher, *et al.*, 2010). In addition the employment multiplier effect shows how the employment rate could suffer changes due to positive and negative alteration in tourism expenditure. For this reason, it is important to notice that its interpretation involves some assumptions which should be treated with caution. There is a linear relationship between income/outcome with rate of employment. This correlation does not reflect the economic reality, in fact it is commonly accepted that this relationship is non-linear. And another is that the industry works in full capacity, therefore an increase of tourism demand will bring a rise of employment. This is too simplistic a rule to be considered a reflection of reality. However, this premise allows this figure to be used as an indicator of “full-time equivalent” (FTE) job opportunities. It is only an estimation of the ability to create new jobs following this increase in the tourism expenditure. Factors such as work-capacity of labour force in each sector; the degree of adaptation to mobility between occupations; and different types of jobs which are involved each sector, dramatically affect this estimation (Fletcher *et al.* 2013).

The comparison among employment multiplier rates from different countries and regions reveals that it is necessary to generate a large amount of tourism expenditure to get one new full-time equivalent job opportunity (Fletcher *et al.* 2013). In this sense, there is evidence that the more developed the tourism economy, the larger the employment multiplier (Fletcher *et al.* 2013). From a methodological point of view, this type of comparison should be done when the data is shown as a ratio of employment generated directly. This is because the employment multiplier is translated into several magnitudes when it is worked out in the national currency. On the contrary, input multiplier and output multiplier could be compared in these terms.

The government revenue multiplier must be considered as a significant benefit of any tourism development. The government plays a decisive role in the tourism dynamics. Its responsibility in the success of the destination covers different levels of decision making and action from local to regional or national scale. This presence is clearly reflected in the tax collection which allows the public sector to balance between investment (e.g staff, infrastructure and other facilities) and benefits (e.g revenue, economic activity and

international image). Therefore, an increase of the expenditure in this activity will lead on to a rise in public revenues as well. The ratio of this growth is the value which represents this gross governmental return from this economic influx; or the net value when the public outlay is subtracted from the balance as a consequence of expectable investment after the upturn in tourism demand. As an example, the revenues calculated in the study on shark tourism carried out in South Ari Atoll, Maldives (Cagua *et al.*, 2014: 9). According to this report,

the government would have collected approximately \$457,200 and \$748,800 (6% tax rate in 2012, and 8% in 2013), respectively, as a direct result of the whale shark tourism industry, always basing on the expenditure rates (for 2012 and 2013). Additionally, the results are indicative of the industry's local importance as a tourism driver that can generate revenue for local operators as well as the government.

This exposition have had as an aim to examine the multiplier effect method; its journey in the economic impacts studies; and its potential to draw an economic picture of a tourism destination in a specific moment. The specific multiplier effect method chosen called LM3 was developed by New Economic Foundation (NEF), a prestigious Think Tank of UK, in association with the Countryside Agency as a governmental adviser on socioeconomic development in rural England.

LM3 is a method which belongs to the group of the economic multiplier effects. Therefore its purpose is to follow money in order to understand how it is spent and whether it is reinvested within the defined local economy. By the estimation of the multiplier effect, the way in which marine tourism businesses contribute to the local economy is highlighted. This methodological effort was translated into a document called 'The Money Trail'. Measuring your impact on the local economy using LM3⁸ was the main reference to implement this method in this case study. At the same time, another document from the same process was consulted to understand the entire procedure, 'Plugging the Leaks. Making the most of every pound that enters your local economy'. The aim of this method was clear summarised in the foreword of The Money Trail:

⁸ More information about it at <http://www.neweconomics.org/publications/entry/the-money-trail>

It makes sense to us to strengthen our rural economies – increasing their resilience to external knocks, diversifying their income base and increasing internal economic linkages – so that every pound that does enter a rural area is able to work as hard as possible for the benefit of that area before it leaves for the city. Central to our work is the need to focus our attention on alleviating the symptoms of social exclusion in rural areas (Sacks, 2002: viii).

Taking these words into account the LM3 was implemented in the case study of dolphin watching activity in New Quay, Mid-Wales.

In this section the conceptual framework has been constructed based on a tour through the development of the multiplier effect concept as one of the principal financial tools for researching in the tourism field. After this explanation, the next step is to approach the reasons for the necessity of a study called “economic impacts of dolphin watching activity in New Quay, Wales”.

Chapter 3. Research scenario

This chapter has as its purpose to establish the research guidelines of the project. It examines how the main objective of the study was implemented under the orientation of the research questions in a particular situation as a case study.

3.1 Main aim

To understand how the dolphin watching activity is contributing to the host regional economy, through the multiplier effect method: identifying the paths of expenditure, making visible in this way its economic impacts.

This grassroots approach works along the same lines to maximise its embeddedness in the local economy and to ensure the most sustainable local economic development in places with a strong ecotourism product.

3.2 Key research questions

To what extent is dolphin watching activity an economic motor for the region (New Quay in Ceredigion, Wales)?

How much do tourists spend whilst holidaying in the New Quay area when they go dolphin watching?

What is the breakdown of their spending while on holiday?

How are the earnings from this touristic activity used by suppliers and staff?

3.3 Research area: tourism scenario in New Quay

The area of study was determined by two levels: local and regional. The field work was carried out in the local sphere; however the subsequent analysis of data and its discussion had to be completed taking the regional context into account. This was because any human

activity cannot be limited to an exclusive territory without affecting and be affected by the surroundings⁹. Therefore, both geographical spaces are described in this section.

The county of Ceredigion, where the case study was sited, covers 1,800 km² with 60 miles of coastline (the Cardigan Bay) to the west. Nowadays it is the home of a population of 75,900 residents in 31,600 households according to the last census carried out in 2011. The last few decades, resorts and other leisure facilities, such as that of the Ceredigion Coastal Path opened in 2008 as part of the all-Wales Coastal Path, have seen an increase in the offer of enjoying the marine coast tourism.

‘The area known today as Ceredigion ... is a ribbon of coastal communities stretched out along Cardigan Bay.... dotted with hidden bays and pretty fishing villages. It’s a great place to come for marine wildlife watching and there are some lovely beaches too. The main settlement is the Victorian resort of Aberystwyth, now a lively student town. But if you take your time you’ll also discover pretty seaside villages which feel almost Cornish in character, such as Georgian Aberaeron and bustling New Quay – a favourite haunt of the poet Dylan Thomas’ (Footprint Wales -Southend *et al.*, 2011:8).

Figure 5: Map of the county of Ceredigion



Source: Ceredigion government. Database 2014 Ordnance Survey

⁹ More details about this decision are in the methodological section

In the Cambrian Coast of West Wales, a town was chosen for the field work of this study due to its thriving dolphin-watching tourism activity within Cardigan Bay: New Quay. Its relation to the tourism activity dates from the late nineteenth century, reaching already 10,000 visits by tourists by 1895 according to the records (Newquay-west wales, 2014).



Source: Newquay-westwales. New Quay beach in the early 1900s

These were the beginnings of tourism in the zone. Little by little facilities for accommodation were arriving in the area where the significant growth of caravan parks became the main factor responsible for the current type of tourism in the Bay: a family holiday location.

‘We came here because of the whole package: beauty, beaches, quiet place, good size-not very developed, good weather and clean air. Dolphins are an extra-bonus’. It is the generalized opinion¹⁰ among tourists who visit New Quay these days.

This new incentive - 'the extra-bonus'- could be the reason that New Quay, - which always has been connected to the sea, - is shifting to a new stage within this large tourism trajectory, to marine wildlife tourism. Could it become the new economic motor for the region in the near future?

¹⁰ Personal communication to the researcher during the field work of this study.



Source: New Quay beach in 2013. Olga Garcia

This is the main aim of the current project and the answer depends inevitably on the health of the Cardigan Bay Special Area of Conservation (SAC), nominated in 2004 and also categorized as the UK's first Marine Heritage Coast around 25 years ago (Discover Ceredigion website). In their waters, one of only two semi-resident populations¹¹ of bottlenose dolphins (*Tursiops truncatus*) in the UK finds a shelter from the months of April to October. They come from the north of Wales - for different reasons such as clean waters; food, and shelter in Cardigan Bay for breeding¹². This pod of around 200 individuals¹³ is the main reason for the European conservation category and it is becoming the potential star attraction for a developing tourism product. This is supported by the fact that, according to the IUCN Red list web site, - the European Atlantic coasts are home to a population of total at least 610 individuals (Liret *et al.*, 1998; Wilson *et al.*, 1999; Grellier and Wilson 2003; Evans *et al.*, 2002; Ingram 2000; White and Webb, 1995; Baines *et al.*, 2002; Gaspar, 2003 cited in IUCN Red List).

¹¹ The other group visits the East coast of Scotland: Moray Firth. At the same time, it is important to point out that Ireland has another semi-resident population in Shannon Island.

¹² Personal communication with scientific office of the CBMWC, Dr Sarah Perris, in May of 2014.

¹³ The Cardigan Bay Marine Wildlife Centre carried out the bottlenose dolphin photo-identification catalogue 2005-2011, where 161 well-marked individuals showed according to Dr Sarah Perry, Scientific officer of the Centre. Although it is thought that the population can reach the two hundred.

Figure 6: Map of natural resources of Cardigan Bay



Source: Wales Environment Link

The high density of the Cardigan Bay pod together with its semi-resident character, guarantee a high likelihood of sightings (nearly every day) during the peak season summer months. This fact was already highlighted by the International Fund for Animal Welfare (IFAW) in the special report carried out by O'Connor *et al.* (2009: 118): Whale Watching Worldwide Tourism numbers, expenditures and expanding economic benefits. In it, Cardigan Bay was introduced as the best place in Wales for cetacean sighting, especially bottlenose dolphins and harbour porpoises, with a 90% success rate of spotting (based on survey results). Although there is a significant land-based dolphin watchers – around 1,000 spotters in the area, Gwbert, in Cardigan Bay, according to the report of IFAW (O'Connor *et al.*, 2009) – the nature and wildlife boat cruises are a popular option and more and more common for tourism. These conditions are the suitable foundation for a significant increase in the dolphin watching tourism industry, as experienced the recent years in New Quay. Likewise, its future sustainability in the leisure sector due to the predictability which this spot enjoys is evident, as Higginbottom, (2004) emphasized when this characteristic was shown as a critical factor for any marine wildlife tourism proposal: wildlife watching takes

advantage of great concentrations at predictable times of the year. At the same time, the preferences of visitors are also a key factor to consider. In this sense, the study carried out by Moscardo, *et al.* (2001) in Australia and New Zealand in regard to these tourist choices, already highlighted that watching wildlife in a natural context is the preferred option among tourists. This statement was also validated by Lauber *et al.*, (2002) where British tourists and Europeans in general showed around 74 % of interest in enjoy watching the wildlife in their own ecosystems. The proximity to another species is another element valued by this tourism with 29% indicating its importance. Similarly, large animals, intelligent, colourful, graceful and iconic for human beings because of their similar behaviour to ourselves, enjoy a greater empathy from the tourists (Woods, 2000).

All these reasons suggest that inside this idyllic tourism picture, dolphin watching trips are revealed as a suitable option for developing tourism based on natural resources: charismatic species which can be approached close enough to enjoy them without irreversible damage (provided that the activity is running under environmental protocols). New Quay has these necessary conditions to begin this activity. And nowadays under the "philosophy" of the SAC, the dolphin watching activity is being run with a passenger carrying capacity through the boat licences regulations issued by the Council and under the supervision of the harbour master; adequate code of conduct and; conservation and scientific guidelines represented by Cardigan Bay Marine Wildlife Centre¹⁴ and Sea Watch Foundation¹⁵

¹⁴ <http://www.cbmw.org/>

¹⁵ <http://www.seawatchfoundation.org.uk/>



Source: Pier of New Quay in 2013. Olga Garcia.

Therefore, this former fishing town, with a strong fluctuation of population due to the determining influence of the holiday season with around 1100 residents¹⁶ in winter and thousands in summer¹⁷, maintained in the 2013 season a capacity of 180 boats according to the harbour master¹⁸. This fleet was composed of 167 private boats and 13 commercial boats. This last group was consisted of 2 angling boats, 6 commercial fishing boats; and 5 dolphin watching boats.

¹⁶ Office of National Statics, according to a personal communication with the staff of CBMWC.

¹⁷ The caravan site accommodation available in the area can reach to 19000, according to personal communications with owners of dolphin watching tours.




¹⁸ Personal communication by phone.



Source: Boarding time on the pier at New Quay, 2013. Olga Garcia

These marine wildlife boats belonged to a local industry composed of three operators whose particular characteristics are detailed below in the table 5:

Table 5: Dolphin watching activity. New Quay, season, 2013

<i>Characteristic</i>	Companies		
	 ¹⁹	 ²⁰	
<i>Year of foundation</i>		2008	1996
<i>Brief history</i>	Information not provided	During the first year it ran diving trip boats. In 2009 it started with marine wildlife watching.	This skipper ²¹ was working with angling trips since the early 80's. This firm was only one boat until 2010 when a RIB was bought. In 2013 a new boat was incorporated to the company. Nowadays the rib boat is not running.
<i>Type of business SME category (EU)</i>	Micro	Micro	Micro
<i>Staff</i>	2 skippers 2 speakers 2 part time: taut 3 part time: office staff	1 full time: skipper+ speaker (owner) 1 part time: skipper + speaker 1 part time: speaker + taut	1 full time: skipper+ speaker (owner) 1 part time: skipper + speaker 1 part time: taut
<i>Number of boats</i>	2	2 (+ 1 RIB boat which is moored in the Aberaeron harbour)	2
<i>Type of boats</i>	I red II red	A blue: 24ft- Aluminium boat B blue: 28ft	1. white: 33 ft 2. white: 33ft
<i>Carry capacity (number of pax.)</i>	I red: 67 pax. II red : 53 pax.	12 pax./ boat	12 pax. /boat
<i>Length of trip²²</i>	I red: 1.5 h. II red : 2 h.	A blue: 1.5 h from New Quay B blue: 1 h from Aberaeron	1 white: 1.5 h. 2 white: 2h./4h./8h. (*) 1h trip but it was common during that season.
<i>Number trips/day (depending on weather)</i>	I red: 3 II red : 2	A blue: 3 B blue: 2? Because it comes from Aberaeron	1. white: 3 2. white: 2
<i>Prices of trips²³</i>	I red: £8/adult; £4/child II red: £15/adult; £7.5/child Adult: over 16 years old	A blue: £15/adult; £10/child B blue: £20/adult; £10/child Adult: over 16 years old	1. white and 2. white: 1.5 h.: £15/adult; £10/child 2 h.: £18/adult; £10/child 4 h.: £35/adult; £20/child Adult: 12 and over. (*) 1h.: £12/adult; £6/child
<i>Type of party According to observation and personal comments of owners</i>	Mixed: Family with children	Mixed: Family with children	Mixed: couples mainly and families. A few individuals.

¹⁹ This company provided scarce information about its business.

²⁰ <https://www.facebook.com/seamordolphins>

²¹ The owners of dolphin watching businesses and their staff named themselves as 'skipper' therefore it was decided to keep this local nomenclature.

²² It is important to mention that the length and frequency of trip are changing constantly from one season to another season and sometimes in the same year. For this study, it has taken the most common length and frequency of the trips related to the season 2013.

²³ According to the owner of dolphin watching business in New Quay the VAT in the price of trip is rated zero because they carry < = 12 pax.: HMRC Reference: Notice 744C (July 2011).

Some characteristics described above deserve special attention because of their influence in the entire wildlife tourism dynamic. As has been explained above boat trips are not new in this tourism location; however the dolphin watching can be considered novel as an activity within the tourism scenario in the Bay. The firms involved in this activity, are considered micro according to SME (small and medium sized enterprises) defined by EU law:

Micro business, EU recommendation 2003/361

<i>Company category</i>	Employees	Turnover	or	Balance sheet total
<i>Micro</i>	< 10	≤ € 2 m		≤ € 2 m

The same categorization is used by several authors to define business owned locally which are run on a small scale (Shaw, 2004; Mustika *et al.*, 2012). Also the small to medium-size wildlife-tourism enterprises (SMWTEs) described by Higginbottom (2004) who emphasised some common facts for wildlife tourism. For example the lack of experienced staff in commercial operations, including the ownership, and its capacity to hire this professional staff, in comparison with other leisure options (McKercher, 1998; Beeton & Graetz, 2001). This situation is due to the fact that the majority of these owners have to do managerial and administrative tasks without any counsellor and at the same time, become involved in the day-to-day operations of their enterprise, as guides, drivers and hosts (McKercher, 1998; Beeton & Graetz, 2001; Higginbottom *et al.*, 2003). Consequently, their opportunity to be trained in formal business is limited. To these factors must be added the vulnerability of the labour situation in this sector, as a result of this size of firms and its strong seasonal influence defined by the presence of dolphins and the holiday period of tourists. The dolphin watching season 2013 in New Quay, started at the beginning of April (Easter) until the end of September. However, the peak season²⁴, based mainly on school holidays, was from the last week of July to first of week of September (summer 2013). In conclusion, the low season was composed of 21 weeks and the high season of 5 weeks²⁵.

In regard to the employment status of the staff, this particular case of New Quay also represented the common situation of the sector as O'Connor *et al.*, (2009:26) highlighted:

²⁴ The weather of Easter 2013 was bad therefore it was not considered peak season. Likewise the bank holidays are key days for this activity if the weather is suitable, consequently these days should be also considered as “peak season”: Early May Bank Holiday on May 6 and Spring Bank Holiday in May 27.

²⁵ This number will be slightly modified in the calculations. See the analysis the data section.

'Where whales or dolphins are resident (which is the case in many dolphin watching locations in particular), the jobs are more likely to be permanent. The lack of permanency of employment is not uncommon in tourism-reliant coastal communities around the world, where much of the local economic activity tends to be based on peak tourist seasons'.

However, high staff mobility and other factors above described were a constant in the dolphin watching businesses in New Quay. These conditions significantly affected the results and the course of the study due to the specific character of the research: study of economic impacts.

Moreover, the difference of the passenger capacity among three businesses was critical in the dolphin watching tourism picture. The Red company enjoyed the higher capacity as that company had the bigger boats with more capacity for passengers due to the fact that these boats were built when the cost was not disproportionate. It does not make financial sense for the other owners to buy bigger boats, the cost is too high²⁶. This fact defined the offer and demand of this activity in New Quay, drawing a scenario of mass tourism for this company and another more specialist tourism one for the White and Blue firms with only 12 passengers per boat. Similarly, the factor of the weather forecast has a high level of influence. The dolphin watching activity hugely depends on the sea and weather conditions to safely run the activity. Indeed the good weather is a key factor for the good disposition of the visitor. This perception plays a decisive role within jobs "working with the public": a bright sunny day means a perfect day for a boat trip. In this sense, it is interesting to mention that according to the skippers, the weather forecast is more important than the actual weather because the tourist organizes their holidays or more generally their day trips based on these predictions. It means that the prediction of weather dramatically determines the attendance of tourists and hence also the number of the trips per day. During the low season, this factor was critical due to the "day trip" during the weekends as a common leisure formula. Therefore, it can be argued that the weather forecast some days was "who" decided the trip to New Quay. In addition, the tides determined the exact times of the trips.

Another element to consider in the picture of any research area is the interrelationships among stakeholders. Every project which involves a community should consider the

²⁶ Personal communication by phone with one of owners.

network of key actors in order to reveal its “socio-economic multiplier effect”. Tourism is not an exception, especially the leisure option where the natural resource is the core of the proposal: the relationship between these communities and their environment is crucial for their future. In fact, the proper identification of this network can reduce the economic, biological or social risks which usually constrain the sustainability of the tourism industry (Mustika *et al.*, 2012). The same philosophy in which the European Charter for Sustainable Tourism is involved: the local partnerships (including local residents, local businesses, tourists and the management agency) and their critical role in the conservation of nature are key factors for the foundation of many tourism destinations (Higginbottom, 2004). This positive impact is analysed at the different levels: local, regional, national and international. In this case, as this dolphin watching study was implemented at community level, only this sphere was explored but without forgetting the potential benefits on other layers, which will be considered in the conclusion chapter.

In New Quay, the tourism private cluster represented by dolphin watching businesses is the first target group interested in this type of research. Therefore, developing the body of knowledge of this activity is one of the first steps to develop a sustainable industry. In this case, it is important to point out that in New Quay, there was not a chamber of commerce, and therefore this crucial association was not included in this study as one of the main stakeholders.

Chapter 4. Methodology

Every project should rely on methodological bases to guarantee the rigor of the research. However, using the words of Saunders *et al.* (2009:155) "we encourage you to use your imagination and to think of research as a highly creative process". Therefore, the following section of the project has the objective to establish the main structure of the study but adapting and being flexible with the application of the theory in the case study. Once the main research question and objectives have been clarified as a first step in the design, the next stage is to select the main philosophy, approaches, research strategies and the techniques in order to carry out the project successfully.

In the first instance, the study was conceived under the parameters of a quantitative research project due to the fact that the main aim was to work out the ratio which would show the economic impacts of dolphin watching activity in the region. However, during the course of the research, because of the "grounded" character of the method, the contribution of social science was becoming more essential. In other words, as the chosen method (LM3) demands, the economic analysis was carried out through a "bottom-up" approach, where the participants of the activity - dolphin watching- were the only resource of information. Therefore, pragmatism was the central philosophy where objectivism was the main guideline but with the clear presence of subjectivity as a result of confronting the necessity of collecting financial data within a tourism context.

4.1 Philosophy

The role of the principles, assumptions and world-vision influence the way the researcher constructs knowledge, uses the established paradigms and includes their own values on the study (Saunders *et al.*, 2009). At the same time, as Johnson & Clark (2006) point out, the most important factor during the process for defining the philosophical approach is to reflect on the choices taken and maintain the coherence implicit in the entire procedure. Therefore, this study was designed under the pragmatic guidelines. Although the main aim was to calculate a tendency, a generalization about the economic performance of dolphin watching activity through its multiplier effect ratio, the particular circumstances in every round of investigation

(tourism-businesses-staff) unavoidably influenced the approach. As a consequence, adaptation during the research procedure was the core strategy.

The choice of the main philosophical approach was done following the guidelines argued by Guba & Lincoln (1994) that showed the Pragmatism as a stream which defends the research question as the core of epistemology, axiology and ontology of the project. This philosophical position allows certain flexibility in all three of them and matches perfectly with the mixed method (the methodological choice for this study). In addition, this theoretical reflection is understood as a continuum as Tashakkori & Teddlie (1998) suggested. Moreover, 'at some points the knower and the known must be interactive, while at others, one may more easily stand apart from what one is studying' (Tashakkori & Teddlie 1998:26)

Ontology:

This study relies on the data collection from the key players in this economic activity. This gathering was done by questionnaires during the three rounds of the method. The starting point consisted of collecting data about tourism expenditure which will flow within the local economy. This amount obtained through the first survey, is based on the capability to remember places, prices and items whilst on holidays. Therefore considering the complexity of memory process and its strong link with factors such as age, the data gained must be analysed under these special conditions: quantitative research with clear influence of the subjectivity of polled visitors. This revelation encouraged the researcher to assume the ontology under the umbrella of pragmatism. The objective aspects of this study could be defined by the categories which were selected to determine the economic impact. This means that it is assumed that every holiday trip is based on these following items: accommodation; food and drinks; travel methods; souvenirs and leisure activities. However, at the same time, as was previously shown, during the course of the study the interpretivism gained strength because of the significant influence of the role of the society in the construction of the studied context. In this sense, this project was carried out in Wales, where Western culture is the main world vision which establishes the guidelines to organize knowledge, including within academia. How the economic impacts are categorized by capitalism can influence this type of studies. It means that market values have priority

over non-use values, being shown in questionnaires (the main research tool of this study). Items such as accommodation; food and drinks or souvenirs defined the tourism survey to work out the economic multiplier effect ratio. However, this economic impact method and others do not contemplate the effect over social characteristics like gender or generations: social elements which are strongly related to the economic development of any region. Therefore this type of analysis is still located in the first stage of the holistic approach where the priority is to calculate the global impact without going into depth regarding the consequences of this economic flow within the social dynamic. As a result, the economic sphere is treated as another scope, not included inside the society dimension as it should be. Following this line of argument, other social constructions of particular Western culture and some of the more distinctive characteristics of the British culture (to which the target group belonged) had some impact on the collected data related to the object of the study: expenditures and dolphins.

On the one hand, the good manners of British people, which are very rooted in their behaviour, pushed them to try to behave as “good people”. This predisposition influenced in the way to provide the data of the project: The aim of the project was to understand the expenditure of key players locally. This support to the local business network is socially acceptable, it is part of being a “good citizen”. Therefore, when the questionnaire was explained, it inevitably generated a bias when the people polled tried to appear as "good visitors". On the other hand, the way to select the target group among the entire tourist sample was to ask for their interest in dolphins in order to capture only dolphin watchers. The positive image of animals such as dolphins within western culture defines the social constructions about how the relationship with them must be. As a result, the question about the interest in dolphins did not have the desirable effectiveness as a filter question. This weight of subjectivism within the project was supported by the suggestion of studying in detail the context where the project is carried out in order to reveal the subjective meanings which provoke the actions of social actors. The understanding of these social constructions could be determinant when the researcher has to appreciate and admit some motives, actions and intentions of social actors involved in the study (Remenyi *et al.*, 1998) as this project had to do. In this sense the techniques from ethnography were crucial.

Epistemology:

This project worked with observable facts like the consumption habits of key players. According to Remenyi et al. (1998:32);

‘working with an observable social reality and that the end product of such research can be law-like generalisations similar to those produced by the physical and natural scientists’.

However, consumption behaviour cannot be reduced to a simple phenomenon without any influence from factors such as social dynamics included in this ‘observable social reality’. This is despite the project being based on finding one multiplier ratio. During the field work, some circumstances intervened and obligated a re-think of the epistemological approach. For example, the weak relationship between the community where the project was carried out and this University did not allow for keeping the researcher “neutral” of any feeling or perception about the project. This fact was especially obvious during the second round of the data collection, with owners of businesses and in less impact with the staff round. Consequently, again pragmatism set the tone during the field work.

At the same time, the epistemology of the project adopted certain character of critical realism when the power relationship among the three dolphin watching businesses was revealed as a key factor during the early stages of the project: the fragile balance between cooperation and competition, which is common in the stage of rejuvenation in a holiday destination, can define how these "key actors" will be involved in the study and what type of the relationship with the researcher will be established. In other words, as critical realists defend, the reality or context is constructed by social agents involved in that reality, therefore the context is dynamic and in constant change, having some impact on the research (Bhaskar, 1989; Dobson, 2002; Saunders *et al.*, 2009). In addition, certain aspects of interpretivism emerged in terms of the critical factor of the accessibility of the data. In this sense the roles, which are adopted by people in different social scenarios, can play an important limitation during the course of the project. In this case study, the attitude of the first target group (tourists) to take part in surveys, especially when it is related to this type of "sensitive" information, finances, was not always favourable. This behaviour can be described as common in a “tourist role” which society adopts during the holidays. This "stance" can become determinant during the collecting data. Therefore, the challenge was

‘to enter the social world of our research subjects and understand their world from their point of view’: the phenomenology and symbolic interactionism (Saunders *et al.*, 2009: 116).

Axiology:

‘..our values are the guiding reason of all human action.... researchers demonstrate axiological skill by being able to articulate their values as a basis for making judgements about what research they are conducting and how they go about doing it. After all, at all stages in the research process you will be demonstrating your values’ (Heron, 1996 cited in Saunders *et al.*, 2009: 116)

In this sense, the development of the project was led by the pragmatism tradition, imbuing it with the Western cultural values (to which the researcher belongs). This world vision was present in all stages of the project, endeavouring to be more objective in some of them and more interpretative and subjective in others. For example, sensitive information, like financial data, usually causes the interviewees to feel uncomfortable when faced with the surveys. Therefore the chosen method, LM3, plus the sensitive character of information did not allow a wide margin for exploring other types of research techniques, a priori. As a result, although the bottom-up approach entails a lens more related to social sciences and all of its traditions and practices on which it is based, the data collection had to be carried out under the guidelines of objectivism. However, certain subjectivism from the cultural values of the researcher permeated the whole project, especially during the participant and structured observations. At the same time, it had to be taken into account the fact that the anonymity of the financial data is a basic pillar in the business field, at least in the Western culture. Therefore, the ethical issues related to the treatment of this data were widely considered in order to gain the trust of target groups, especially with business owners. This situation made more visible the current lack of connection between the University and community.

4.2 Research approach

Taking into account the suggestion of including in studies, preferences of the researcher (Buchanan *et al.*, 1988; Bryman, 2007), this section will begin by making a statement of intent: The researcher of this study has developed as a researcher in inductive studies, therefore her perspective was present during the entire project but at the same time, being

aware that this project demanded an approach closer to the deductive process. Therefore, the procedure of the research was based on a **deductive approach** where the journey involved implementing the theoretical model – 'Local Multiplier effect 3 (LM3)' - and validating the thesis: dolphin watching activity is generating an economic multiplier effect in the region. In other words, it was about testing this theory and finding the economic causality of dolphin watching activity: two principles of the deductive process. In order to achieve this, the measurable facts which were chosen to design the project were related to consumption behaviour. Through categories like accommodation or boat trip price, the expenditure of tourists was calculated on the same basis as that which happened to the other rounds: business and staff. Therefore, the reductionism from this research approach was implemented to try to make this calculation easier, avoiding the diversity and complexity which any holiday trip includes. In addition, the generalization, characteristic of deduction (Saunders *et al.*, 2009), was present when the entire process was focused on working out a ratio for giving an idea about the intensity of that economic impact. However, at the same time, some processes such as the design of the questionnaire, or how the target group was chosen, resulted in making some decisions less objective than this approach usually demands: making decisions based on values; emerged limitations; or social factors involved, are inevitable in this type of bottom-up studies.

Purpose

As Saunders *et al.* (2009) pointed out, the studies which use the description in order to explain a phenomenon, situation or other researched element are classified as **descripto-explanatory studies**. This is the case of this study: the three target groups are described from the point of view of their consumption behaviour with the purpose of drawing the tourism picture of the dolphin watching activity in the area, and subsequently, understanding the economic multiplier effect generated. The data was collected through the quantitative method of surveys but with some qualitative techniques like participant observation from ethnography in order to understand some social forces which were working inside of the tourism dynamics.

Strategies

The main strategy adopted in this study was the case study with a strong support in survey and significant contribution from ethnography. The **case study** is defined as research a strategy where an empirical investigation of a particular contemporary phenomenon within its real life context is involved, using multiple sources of evidence (Robson, 2002 cited in Saunders *et al.*, 2009: 145). Therefore, it allows the enrichment of the knowledge about the context, avoiding the limitation by the number of variables as the strategy of the survey implies (Morris & Wood 1991). Following this stream, this project was visualised as a single case study where the theory (LM3) would be proved in a selected previous context, New Quay. The reason to choose this particular location was because it symbolized the marine wildlife tourism, dolphin watching, in the region, Ceredigion County. Therefore, the perspective was holistic, treating the case study as a whole. In addition, as the rigour of the case study strategy insists on, the **triangulation** was implemented from disciplinary and methodological approach. For one hand, different bodies of knowledge were included during the course of study: tourism, economy and sociology were the main contributors. On the other hand, the usage of different techniques of data collection such as questionnaires, observations and diary record guaranteed an approach to the object of study from different angles. Therefore, the idea of confronting the findings was guided by these cross-cutting procedures.

The **survey** was the main chosen strategy for the study: using a questionnaire and structured observation. This method allowed collecting quantitative data at a sample level in order to extrapolate the results to the entire tourism phenomenon in the region. As a deductive strategy, the survey allows discerning the causality among the studied variables and later building a model from it (Saunders *et al.*, 2009).

The **ethnographic practices** in this study were adopted in order to able to make the community accessible to the researcher and with the aim of establishing a high degree of trust and promoting a good relationship with the research participants, as one of the main research values which are supported by this sociological strategy. Although it was a deductive research with quantitative goals, this involvement in the context allowed the investigation of the social dynamics which were impacting on the course of the dolphin

watching activity. Due to this fact, the researcher moved in to New Quay for the three summer months in order to understand better this tourism scenario; handle better the daily variations of the timetable of boat trips; and cover the all tourism prime times for dolphin watching. This decision allowed the author of this study to hold some informal conversations with key players and some residents of New Quay who helped to construct some perceptions about the tourism structure and flows inside and outside of the community.

As a result of the above mentioned strategies, this study followed the **mixed-model research** where the data mainly was collected quantitatively through questionnaires but with a significant support in qualitative techniques such as the participant observation or the diary. At the same time, the analysis of data has been shown in a narrative way in order to explain the links among the categories which were used to calculate the economic multiplier effect, as a way of describing the expenditure behaviour of key tourism players associated with this case study. In other words, as Bryman (2006) pointed out, the use of qualitative methods allows the analysis of the microelements hidden into the macro elements discovered by the quantitative investigation. This **combination of quantitative and qualitative techniques** is more and more common, including in the business research field (Curran & Blackburn 2001). Additionally, this methodological choice contributes to management of the “method effect” in the results, increasing the confidence in the conclusions (Saunders *et al.*, 2009).

Time horizon

The methodology of LM3 demanded a time horizon of cross-sectional type since the aim is to calculate an economic multiplier effect of an event, phenomenon or activity in a precise period of time. Therefore, this study was designed to estimate this ratio of a tourism season under the influence of the specific conditions during this time but with the purpose to use this result as approximation of the economic impact of this activity which is happening in the region nowadays. In addition, the cross-sectional studies are the suitable time horizon for studies where the survey is one of the core research strategies (Easterby-Smith *et al.* 2008; Robson 2002) as was employed in this project.

Partners of the study

Access to the community was agreed in principle with the Cardigan Bay Marine Wildlife Centre (CBMWC), and two businesses of the cluster (which is consisted of three companies). A collaboration agreement was reached between Aberystwyth University (Tourism Department -SMB) and those entities under the rules of the European Social Funds (ESF) through the Knowledge Economy Skills Scholarships (KESS)²⁷, sponsor of this MPhil.

The participation of all three companies and other key players was crucial for the entire research process.

Target groups for the study

The choice of target group for the collecting data was carried out taking into account the method of analysis chosen: LM3. Consequently, for the: first round: the project involved **visitors** who stay at least one night away from their normal residence and who visit the destination for a day trip. Both types were considered as tourists in this study. However, the main aim of this study demanded the selection of a specific group of tourists: the dolphin watchers. Therefore, a filter question was employed to make this distinction during the survey period: tourists who showed interest in dolphin watching which translated into a willingness to book a dolphin watching trip. This group was coded as "dedicated" dolphin tourists " (the classification supported by O'Connor *et al.*, 2009: see the conceptual background). The second round: the **tourism businesses**. They were selected from the answers of questionnaires of the first round and from the structured observation conducted during the field work. And, lastly the third round: the **staff** of each business from the second round as representatives of the local community.

²⁷ <http://www.aberbangorpartnership.ac.uk/business/KESS.php.en>

Techniques of collecting data

The collection of data relied on the first primary sources: questionnaires, observation (participant and structured) and diaries. All the techniques were implemented simultaneously in order to gain appropriate data to answer the research question: could dolphin watching activity be an economic motor for the region (the county of Ceredigion, Wales)?

Questionnaires

The questionnaires are common as a collection data technique in descriptive or explanatory research. And as the theory dictates its design as a key factor to be considered due to 'its potential impact over the quantity and quality gained data' (Saunders *et al.*, 2009). As a consequence, taking into account its crucial role in the collecting process, the questionnaires were structured based on a combination of: open questions related to the profile of the polled person; list questions about the tourism preferences; category questions in the section of trip profile; ranking question as the filter one related to interest in dolphins; and quantitative or matrix questions when the economic expenditure was enquired.

Another key factor, its delivery, was approached in the following way. In the tourism round, the interviewer-administered questionnaires were delivered by hand with a quick explanation about the project, apart from the introductory paragraph included. Firstly, a filter question was used to choose dolphin watcher within entire tourism population. Once the interviewee was identified and the questionnaire was delivered, the researcher waited for its collection, in near physical proximity to the polled person. Therefore, these questionnaires became self-administered questionnaires during that period, expecting some characteristics of it such as more socially desirable responses can make some impact (Dillman 2007). On the other hand, for owner of businesses and their staff rounds, it was decided to employ self-administered questionnaires, delivering them by hand (with the proper explanation) and collecting those days later. This procedure was modified slightly to be returned by post in order to guarantee the anonymity. At the same time, as in the first round, in this case, that decision meant that the high risk related to the rate of return was assumed.

The questionnaires were designed to test the dependant variable of expenditure behaviour in relationship with independents such as demographic features or range of salaries (gathered in the descriptive sections: profile of tourist).

Regarding the validation, every project during its performance has to face uncertainties and inherent biases. Spurious accuracy must be avoided in order to understand the proposal. Following this argument, the project was designed following the SMART framework promoted by the appraisal and evaluation by the British Government (HM Treasury, 2003). The research process should be specific, measurable, achievable, relevant, and time-bound. It is about a study which is framed in a specific context such as New Quay; its measurement is run through the LM3 tool; the result is achievable by questionnaires; its relevance is guaranteed with the result for the population involved; and it carries out in one year time-scale.

The lack of the market information at this local level demanded that the project was designed to build the own data set. To achieve this aim, the questionnaires was under controls to ensure that the data is accurate. In this sense, the nature of the questionnaire did not allow the inclusion of the proper system of measurement questions in order to apply the content validity, criterion-related validity and construct validity as Cooper & Schindler (2008) pointed out. Even so, this requirement was very present during the pilot project, turning to the supervisors to check the quality and relevance of each question and the entire structure of questionnaire. Therefore, it can be said that the content validity was covered. Indeed, during the pilot project, the clarity of the questions and their meaning were tested with simple questions to people who were being surveyed. On the other hand, the criterion-related validity was not carried out because the method did not demand that the data be analysed by correlation statistics as is recommended for the validation (Saunders et al., 2009). Likewise the assessment of the validity of the construct was not applicable for this research study.

In addition, the data collection process must also conform to accuracy controls to ensure the validity of findings. Regarding this, as the Green Book (HM Treasury, 2003) states, the target group defines the type of data which can be collected and under which type of circumstances will be carried out. During this study, the data gathering exposed some

uncertainties due to the low participation of business and staff layers. This challenge was covered using additional techniques such as participant observation and informal conversations as the HM Treasury (2003) also suggest;

(..) In these cases, a range of techniques can be applied to elicit values, even though they may in some cases be subjective (2003:22).

7.8 The availability of output and performance measures and targets, and other monitoring data, and how they relate to the objectives should be reviewed. If this information is inadequate, consideration should be given to the collection of additional data, although ideally, data needs would have been considered at the outset of the project (2003:46).

The latter recommendation contributes to one of the outcomes of this project which is to provide reliable data to the stakeholders to improve the activity in the region. For this, qualitative information has been used to understand the expenditure behaviour of the business and staff sector by the techniques mentioned above. Likewise, this extra information was used as a double check in order to validate the analysis from questionnaires. For more information about this process see section 4.2.2 Collecting Data.

Observation

Structured observation and participant observation during the field work in the first round, on the pier and on the boats, were implemented as a supplement to the other techniques. The **participant observation** was used as complementary technique during the period which the researcher lived in the scenario of study. The purpose was to understand the context and the symbolic world where the tourism activity operated as Delbridge & Kirkpatrick (1994) pointed out. As the researcher was identified (with University logo) during the most of time of the process, the role was of participant as observer on the boat trips and observer as participant (categories established by Gill & Johnson, 2002) developed during the work on the pier, witnessing the tourism flow. This latter technique allows an analytic - reflective perspective *in situ* which can enrich significantly the research process (Robson, 2002). At the same time, these methods were used to gain the trust of the group to be part of the context.

The structured observation was used for validating some information provided by the respondents such as the list of the local businesses where they were spending their expenditures during their stay in New Quay. To record this pattern of tourism flow associated with dolphin watching, the researcher was at the discreet point on the pier where dolphin watchers landed from the boat trips. Therefore, although the researcher was identified by the visitors, the frequency and the chosen place out of the dolphin watching boat trips allowed a reduction in the “observer effect” with minimal interaction and habituation (Robson, 2002). Other elements were recorded with this type of structured observation such as the number of dolphin watchers in each boat which the researcher took; the weather; the affluence of the tourism; number of questionnaires delivered; tasks done by the researcher; among others. A format was designed for this purpose (appendix 1).

Diaries

The keeping of a research diary was a significant technique during the field work of the first round. As Delbridge & Kirkpatrick (1994) categorized, this qualitative method allowed the recording of: primary observations related to the dolphin watching activity from the pier and on the boat; and secondary observations based on informal conversations with the visitors who decided to take part in the survey or dolphin watchers during the boat trips. At the same time, casual conversations with the crew of these boat trips. Experimental observations fuelled by the perception, feelings and interpretation of the researcher during the interaction with the dolphin watching activity.

In addition, an audio-digital diary was kept to reinforce the daily routine during the field work and investigate other ways to record the perceptions and findings during the work with tourists. Its chronological format was crucial to develop of the “story line” of the project during the analysis process as was advised by Riley (1996).

This material permitted the registering of "mundane elements" which usually help to understand the context and therefore they were incorporated into the analysis of the data collected by other main strategies in order to find the connection between quantitative categories of the consumption behaviour.

4.3 Analysis of data

The analysis of information obtained during the field work was mainly examined using the economic multiplier effect method called LM3. In this sense, it is important to point out that although the aim of the project was not to make a statistical analysis with the collected data, the data from the tourism round could be scrutinized by statistical software- such as SPSS - in order to draw the current tourism profile in detail. Therefore, this data is available for a later analysis of this type.

4.3.1 Method: LM3

The comprehensive understanding of the marine tourism supply chain and its impact on convergence communities could assist in the enhancement and promotion of a sustainable low carbon tourism economy in West Wales. Examining both the supply and demand side of this equation allows for a thorough and complete investigation into the contributions the local marine tourism sector can make towards the local economy. Hence, the LM3 was implemented in the timescale of one year in order to achieve the best outcomes for this project.

This multiplier effect is calculated on three levels, as already was explained in detail in the conceptual background. The first one involves dolphin-watching tourists, asking them how and where they spent their holiday budget. Having identified the starting amounts and the entry points into the local economy of New Quay, the second phase is addressed at the local businesses which have been noted by the tourists as places where they have spent their money. The final stage is focused on the consumer habits of staff members of these businesses.

The applied method was an adaptation of the LM3 due to the fact that both paths - A and B - designed by NEF for developing the method did not represent the requirements of this case study. Path A was built to understand the economic influence of an organization in a specific region. For it, this option considered the income of this organization as the starting point. On the other hand, Path B was designed to calculate the economic impact caused by a group of people, based on their income. However, in regard to this case study, the

tracking of the money was begun through the expenditure of dolphin watching tourism. Therefore, it can be said that this project followed a hypothetical “Path C” where dolphin watchers in New Quay were considered as a group and the money that they spent locally during their holidays was the starting amount. As a result, in this adaptation, the formula had to be slightly modified to take into account the particularity of this case study. This application was implemented by the following steps:

Round 1: tourism expenditure locally

The aim was to understand how much money was flowing inside the local community. Therefore the tourism expenditure outside of the region was not considered as part of the starting amount. This monetary flow was measured as a **direct effect** of the dolphin watching industry in the region.

Round 2: $\frac{\text{Round 1} * \% \text{ Business spent locally}}{100}$

In this level, the economic impact was referred to the **indirect effect** of the dolphin watching activity.

Round 3: $\frac{\text{Round 2} * \% \text{ Staff spent locally}}{100}$

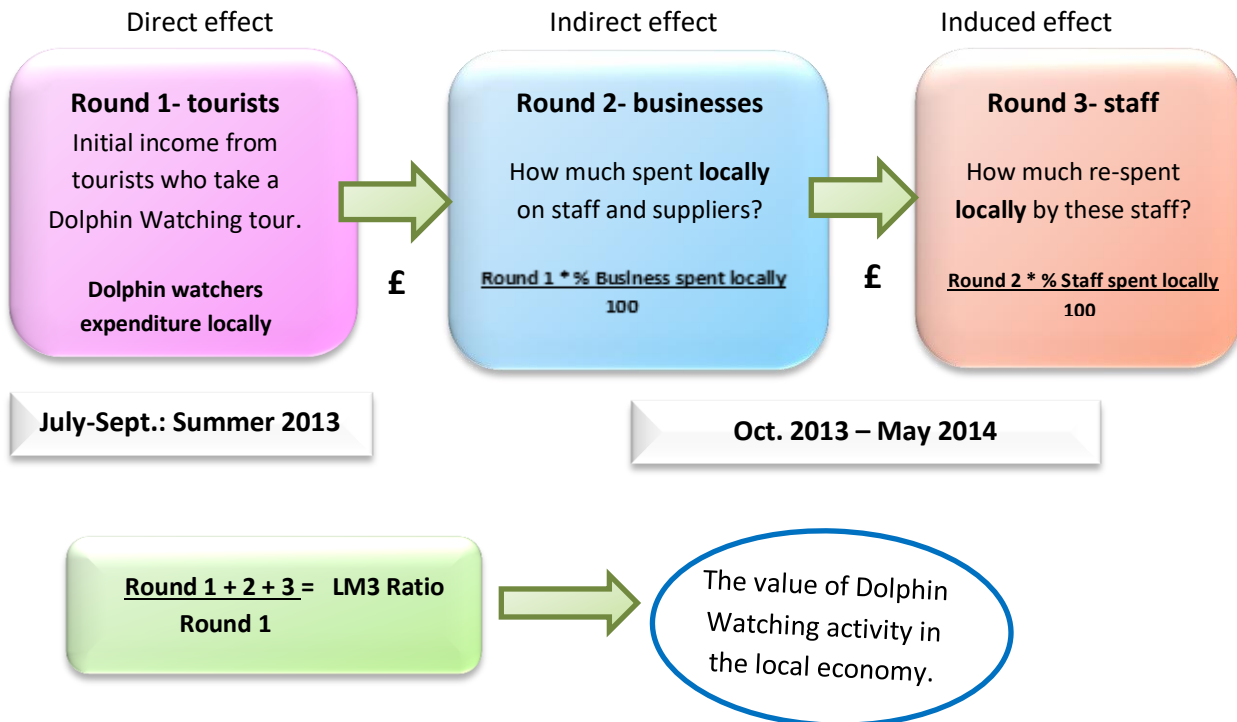
The **induced effect** was reflected with the scrutiny of this economic layer of the dolphin watching sector.

The formula applied was: **$\text{Round 1} + \text{Round 2} + \text{Round 3} = \text{LM3 Ratio}$**

Round 1

According to the method, the ratio of LM3 can reach a value between 1 and 3. However a realistic limit determines this value until 2.20 which is reduced by an expectable 30% of incomes from people and organizations because of taxes (Sacks, 2002).

Figure 7: The Local Multiplier Effect process in New Quay



4.4 Field work

This study is based on the collection of information directly obtained from the major players in the tourism dynamics: visitors; business owners; and staff. The data collection was carried out following the guidelines of LM3 through the field work divided by two phases: the tourism round during the peak season and businesses and staff rounds after that. In both stages the questionnaire was the research tool chosen (explanation in Methodology section). Items such as accommodation; transport; food and drinks; souvenirs and other activities were the core of the survey in order to establish the classic paths of tourism expenditures. At the same time, some questions related to type of trip, interests and reasons for choosing this destination were included in this survey in order to explain the big picture regarding the dolphin watching market in New Quay.

The collection of data regarding the tourism money flow in New Quay was conducted in the peak season from July to October of 2013. For the discussion of results it is significant to point out that this season was especially profitable for the sector due to good weather

which this destination managed to enjoy during the whole summer (specifically until September).

4.4.1 Research Design

First stage: Tourism round

As aforementioned, the first stage of the field work consisted of collecting expenditure information from tourists who went to New Quay to enjoy a dolphin watching boat trip. As an initial phase, it was considered necessary to carry out a pilot project in order to test the key elements of the project (mainly the questionnaire). The study started on 1 July, within the peak season, with a strong emphasis on the project design; defining the first draft of the main researching tool; and setting up the basic logistic and operational structure to conduct the field work. The questionnaire was designed taking as a model some examples from similar projects of the Tourism Department of Aberystwyth University. The Tourism Department has a great deal of experience related to the dolphin watching activity in New Quay in recent years, having implemented some research projects such as “Mediating the Wildlife Tourism Experience” and a small project about the economic impacts of tourism carried out during the summer 2012. After this initial period, the associated pilot project was set in motion on 19 July, and concluded on 30 July. These two last weeks presented the only window of opportunity during which the pilot study could be conducted. Four days of this time were spent undertaking intensive field work and the rest of time was dedicated to adjusting the survey with tourists: mainly procedure, the questionnaire and the type of participation of key players.

With regard to the questionnaire, trial and error was the proper technique to do a quick assessment about relevance of this tool in order to check the clarity of questionnaire for this target group and its feasibility under these holiday time conditions. During this time, it was refined on several occasions, changing the order of some questions to follow a more logical storyline; rewording some of the questions to make them closer to the target group; and redesigning slightly the style in order to display a less tedious structure. At the same time,

the locations used in the surveys and timetables were alternated to try to identify the places visited by dolphin watchers and the prime times for doing so. Private places like restaurants were quickly deleted from the list of potential places because of the logistical difficulties in obtaining the permission of owners and the possibility of disturbing the staff whilst performing their tasks. This quick assessment related to identification of the strategic places was done through participant observation. The elements to bear in mind were to find available places to have a chat and time to complete the survey and; being close the pier where the boats depart in order to guarantee that the target group was approached:

- A Small Park close to the public toilets and main shops for tourists such as ice-cream shops, restaurants or takeaways. Places where visitors sit down to enjoy the view of the sea, beach or pier while they have a lunch or ice-cream (a very popular option). It is a crowded place.
- Surroundings of the tourism centre: there are some benches to take a rest and its tourist function ensures access to visitors.
- The Dolau Beach: one of the most popular attractions in this holiday destination.
- The pier: main place where tourists wait for the boats, in the lower level, shared with people who want to sunbathe or go crab fishing. The upper level is ideal for tourists who are interested in watching dolphins from land, eating something whilst looking at the sea or just enjoying the marine view.
- Boat trips, where the target group is absolutely guaranteed.

As a result of pilot project, the suitable places chosen were:

- On the pier: the place where boats departed and where dolphins, which approach quite close to the coast, could be seen. This situation gave the opportunity to hold a conversation with tourists interested in dolphins and ask them for their participation in the survey.
- On the dolphin watching tour boats: captive audience which a priori is interested in dolphins. Also during the trip, the “death times” without dolphins or any tourist resources are ideal to talk about the survey and the importance of their participation. The empathy with tourists is developed better when time and space is

shared. All skippers were very helpful in this task, introducing the project and the researcher. Their participation was crucial for obtaining the findings of the project.

The rest of the tested places were declined as it was more difficult to identify dolphin watching tourists among the general tourists of New Quay. As well as the above, with the aim of including a greater number of tourists and incorporating more variation of tourism profile, the collaboration of the Centre and one of skippers were solicited. Nowadays, the Cardigan Bay Wildlife Centre is contributing to the tourism activity through one of the tour operators (whose owner took part in its foundation) allowing the booking of its boat trips in the Centre facilities, particularly in the exhibition salon. As a conservation education facility space, in the first instance, its visitors are interested in marine nature and probably in dolphins particularly, besides having suitable facilities to complete questionnaires. Therefore its contribution in this part of the project came to be crucial. A stall with the surveys was set up in the exhibition centre for this study.

An appropriate collaboration of the volunteers of the Centre (who are also in charge in the exhibition centre) was crucial to make this initiative useful for the goals of the project. Their contribution meant 21% of collected questionnaires (46 out of 219), being the only source in September and October and an important contributor in August. However, the contribution from the skipper/speaker did not obtain the expected success. According to the skipper, tourists showed little interest in it. Only 1 questionnaire was obtained in this manner. With the same aim, the Tourism Information Centre in New Quay was also considered as a “strategic point” to deliver some surveys, but in the end this collaboration could not be established.

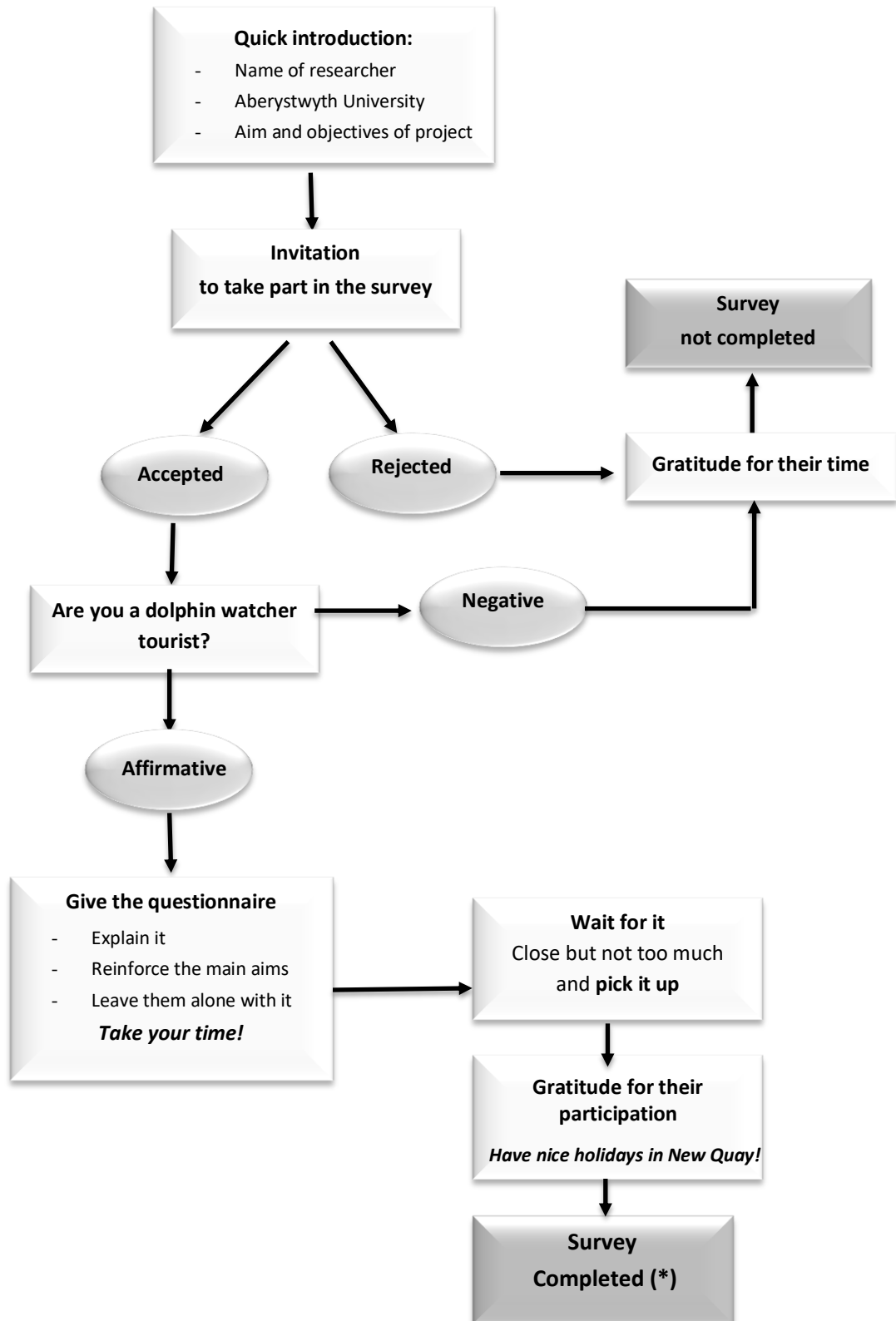
Considering the correct approach in order for tourists to complete it, the questionnaire was conducted in the most respectful way whilst trying to disturb the tourists as little as possible. The ethics guidelines associated with this type of research where human beings are involved were considered in every step of this phase. First of all, as participant observation was one of the chosen methods, the researcher was properly identified with the University card visible at any time accompanied by the characteristic yellow T-shirt from

Aberystwyth University in order to make clear the presence of a researcher in the area. This strategy with the “University uniform” during the fieldwork with tourists, served two main reasons: to establish a more serious and professional link with the target group and to promote the research work outside the academic sphere. And also, in this particular case to try to distinguish from other surveys like so popular habits of consumptions nowadays. Despite this, the feeling that some tourists tried to avoid the researcher when they saw the clip board was frequent. The procedure to make the first contact with the tourist on land was simple: first of all, looking for a tourist or tourist group during their relaxation time: contemplating the sea, drinking a coffee, having a chat. Otherwise, the moments when dolphins were close to the coast, lunch time or excited conversation among the groups were avoided in order to reduce participant burden.. Once contact was made the basic introduction was provided: name of the researcher; University involved and short brief about the project. Following that, the tourists were asked to participate in the study.

In order to make the selection of the target group in an effective manner and to avoid wasting the tourists’ time, the filter question was asked (interest in the dolphin watching activity) at the beginning. If the answer of the key question was affirmative, the tourists were identified as dolphin watchers and the questionnaire was delivered. For more detail, check the following figure 7 about the procedure.

The possibility of carrying out a semi-assisted questionnaire was explored. The help of a researcher was offered to tourists in order to fill in the survey more quickly and correctly. However, on most occasions the offer was declined. Therefore, during the second week of the trial period it was decided not to include this offer. According to the observation, tourists felt more comfortable completing it alone or in groups in order to think carefully about it or discuss some expenditures. That means without receiving help from the researcher.

Figure 8: Procedure to collect data from tourism in land. New Quay, summer 2013.



Source: Field work of this study. Olga Garcia (2014)

(*) Each survey was checked quickly by the researcher to be sure that the information was valid; ask polled people for some important gaps in data or misunderstanding; and for writing down the time/date/place. A small comment about the quality of the data was included in each one by the researcher.

The pollster tried to handle two questionnaires at the same time when the conditions allowed. This procedure was validated during the pilot project and it became the guideline for the rest of the field work.

On the other hand, the process on board the boat needed a different procedure. Because of the specific conditions associated with a marine tour, the practise was significantly different. The maxim was not to disturb the normal performance of the boat staff (skippers and speakers). Therefore, the intervention of the researcher had to be short and concise: after the security talk, the speaker or skipper introduced the researcher and the project and allowed this researcher to explain the main of the study briefly. As on the land, a quick introduction and later the invitation to take part in the survey were made. The questionnaires were left in a visible part of the boat waiting to be filled by the tourists during the "dead times". Likewise, the researcher tried to establish any contact with tourists to make herself more visible and work the "emotional connection" with passengers. This operational "scheme" reached an appreciable grade of success. The testing consisted of three boat trips as the table 6 shows: in two different businesses and in two different lengths of time (1h. and 2h) as well.

Table 6: Delivery of questionnaires on dolphin boats during the pilot project. New Quay, July, 2013.

<i>Business</i>	<i>Date</i>	<i>Length of trip</i>	<i>hour</i>	<i>Number tourists.</i>	<i>Number of questionnaires</i>
<i>White</i>	23/07/13	1	10.00-12.00	3 or 4 families	3
<i>Red</i>	26/07/13	2	12.30-14.30	18 (5 families)	4
<i>Red</i>	30/07/13	1	12.05-13.05	47	1

In this sense, the suitable type of boat trip for the study was checked: time period and tourism capacity were the key aspects. The early conclusion was influenced by the following likelihoods. Firstly, to have "dead times" to complete the questionnaire properly. To cover this aspect, the longer tours were discovered to be the most appropriate type. It means that boat trips of 1.5 hour or two hours were better than ones of 1 hour. And secondly, to create the required atmosphere of empathy for encouraging tourists to take part in survey. The small boats with a maximum of 12 passengers showed themselves to be the best scenario to achieve this aim. This logistical issue resulted in a critical decision for ensuring the quality of

information: the quantity was sacrificed in favour of getting good pieces of information. As a result, during the field work, the small boats were included actively in the study while the tourists from the largest ones and also the most crowded were approached on the pier during their waiting time for the boat or when they returned to the pier. Although these boats were not completely removed from the field work, this strategy meant that the access to this specific tourist group was different and in general less successful despite all efforts made to connect with them.

Furthermore, the pilot project also had as an objective to identify briefly the variety of tourism “profiles” related to dolphin watching activity. Consequently, during this testing period, the different parties of tourists were taken into account: couples and families; young and elderly people; and British and overseas visitors. It is important to point out that because of intrinsic difficulty which characterized the survey (necessity to remember the names of the visited places, the majority of which are in Welsh) two groups of the wide range above mentioned were a low profile in the study: overseas visitors and elderly people. In this vein, the observation process confirmed that the main tourism group which came to New Quay could be still catalogued as the domestic tourism type. Indeed, one of the most numerous segments there, retired people, could not be classified as dolphin watchers because their motivation was associated with the presence of caravan sites.

As seen above and to sum up, the trial period highlighted at an early stage some points which should have been fixed before starting the main field work. However, other ones remained as challenges during the whole project (see the research limitations). However, among all of the aforementioned ones the most challenging and urgent aspect to fix was the research tool, the questionnaire.

To begin with, from the time of the first attempts, the difficulty for filling the questionnaire was evident due to the subject of study: personal finances. As well as this, the necessity of linking the expenditure with the location, as the methodology demanded, came to be a real challenge for tourists and; for researchers to make it easier to fill it out. To deal with this difficulty, it was modified several times during those two weeks of the testing process in order to be ready for the data collection period. Primarily, the task was focused on the budget section (number 3), the core of the questionnaire. The first adjustment to it was related to removing the tables where the financial data was required. During the trials, it

was seen that tourist did not feel comfortable filling these tables and it provoked continuous errors. After several changes finally they were substituted by a simple sentences such as the following, although remaining divided into the four former groups:

How much?: £..... Name of establishment: City/town/village.....

Subsequently, the next change had as an objective to make clearer the importance of including the name of the business and the name of the place where that business was located in each single expense. Additionally, this made it more understandable for the interviewees that they had to write down the expenditure on behalf of the whole party because it was the key factor for obtaining good quality information. And, last but not least, to emphasize that the financial data should be from the whole trip to date and not only that which was related to New Quay. For all of these details, the rewording of the introductory paragraph of the question number 12 was modified to:

12. Approximately HOW MUCH money have you spent on your visit or holiday so far and WHERE? Please complete on behalf of your whole party.

Please include as many different areas of spending as possible, with approximate amounts. Please be as specific as you can about the **NAME of establishments** where you spent the money, because the next step is related to these businesses.

If you have booked something, e.g. accommodation, but not actually paid for it yet, then please include it below anyway.

Please remember that we are interested in your WHOLE trip/holiday, not just your spending today and not just your spending in New Quay.

At the same time, a photographic list of New Quay businesses, accompanied by a map, were elaborated in order to help tourist to write down appropriately at least their expenditures in this town.

The second area to review was the order of questions. For that reason, another modification, and probably the most important, was to move the key question regarding the interest in dolphins to the first position. This choice allowed the selection of the target group easily, asking their grade of curiosity about dolphins when they were first approached. Similarly, the classification into specialist and non- specialist could be done quickly. Additionally, the names of the three dolphin watching businesses were reworded

several times until ensuring the correct names according to the owners of them. However, it is interesting to highlight that tourists were confused and made frequent mistakes when they filled in the name of the chosen business. This factor is due to the fact that the names and the marketing are so similar in all brochures, using the same colour, blue, and the word “dolphin” in all of them. In fact, during the boarding time there was certain disorientation in the queue because of the similar names of the tour operators. The businesses remedied this through the providing different ticket colours. After other small changes, the questionnaire was divided into four sections:

Section 1: About your interest in Dolphin Watching. This was composed of four questions (from 1. to 4.) which explore the knowledge of the dolphin watching activity in New Quay which the tourist had accessed:

- Grade of interest in dolphins
- Name of the tour operator chosen
- Knowledge of the existence of facilities related to conservation.
- Type of information channel used

Section 2: About your visit. The second part provides the clues to understand the tourist preferences which dolphin watching visitors have. Eight questions (from 5. to 11.) make up this section: type of trip; origin; route and length of trip; means of transport; type of the party: number of adults and children; and activities of interest in New Quay.

Section 3: About your holiday’s budget. This segment is the core of the questionnaire. The objective is to collect as much information as possible about the tourist holiday budget. How much is spent and where in order to connect the territory with the expenditure and to allow the pathway of tourist money to be traced within the local economy. As a result, the following items are the main pillars of the tourism structure which dolphin watching supports in New Quay, in other words, the indirect expenditures is formed by overnight accommodation; travel (including parking); food and drink; and ‘other spending’.

Section 4: About you. The last one tries to define the profile of the dolphin watcher visitors. Understanding how tourists are, can help to manage, plan and make decisions about the

tourism industry in New Quay. Gender, age, level of education and type of occupation delineate the type of tourist.

The questionnaire closes with the optional choice of writing down the email or phone number for further queries. For more information, go to appendix 2.

On the other hand, another critical point revealed by the period of the trial was the importance of involving all of the key players, businesses and community, in the project from the very beginning. During the first contacts only two of the three dolphin watching tour operators which are in New Quay were invited to join in the project because of the complex bureaucratic framework of KESS projects. However, when the field work started, and it was seen how decisive was taking part on boats, in all of the companies, the absence of the third company caused discomfort, especially because of the lack of their logo. Immediately, they felt out of the project and threatened by an alleged advantage of their competitors due to the possible implementation of the future findings of this study. At that moment, their collaboration was stopped. A “diplomatic” effort by the researcher and supervisors became necessary to resolve this initial problem and reach an agreement where the findings would be shared with all of companies in order to keep the business balance. In other words, involving all stakeholders and key players, is crucial to the success of the project. As well as this, understanding that the logos is an image which represents them to the general public are important in any relationship with commercial or civil organizations. Their logo was incorporated in the questionnaire in the same manner as the other two dolphin watching businesses.

In addition, during this experimental time, the main perceptions based on the observation of dolphin watching in New Quay were established as foundations for understanding the whole underlying tourism dynamic. Firstly, behaviour, appearance and habits of tourists at the pier, whilst in the queue and on the boat for classifying the types of tourist who are attracted by this marine wildlife destination: specialists vs. non specialists. Secondly, the paths chosen by tourists in New Quay in crucial moments- pre-trip and post trip- in order to identify the more popular businesses for these tourists (second round). And thirdly, organization of an activity by tour operators; their protocol and performance of their staff

during the boat trips and their booking places in order to establish the current stage of this activity within the Tourism Area Life Cycle (TALC).²⁸

On the other hand, from the methodological point of view, this work on the ground allowed the development of a tool for keeping a record of the day to day performance as part of the survey tasks (see the methodology section)

Second stage: business and staff round

Once the tourism round was concluded on 2 September (although the stall of the Centre remained active in collecting questionnaires), the participation of local businesses and their staff became the priority in the field work. For this reason, during the next month, September, both questionnaires were designed in a similar style to the previous survey. This stage dealt with the same sensitive information as previously but with a significant difference: the methodology demanded to know the businesses finances for the second round. This particular characteristic made this phase especially challenging. The procedure was simple: that whole month was given over to finding the way to make the questionnaires easy, comfortable and reliable, taking into account some lessons from the first round. This entire course was elaborated in close collaboration with the both supervisors of this study and fed by the frequent conversations with owners of dolphin watching businesses and their staff during the fieldwork. After the two first weeks of September, a first draft of business and staff questionnaires were ready for the next step: the pilot project to test it before being delivered to all local business and their staff involved in the tourism industry in New Quay (as was done for the tourism round). The pilot project for both rounds addressed the similar procedure.

Second round: business questionnaire

The testing period was designed to be quick and simple: asking both dolphin watching businesses involved in the project since the beginning to test it, but in different ways. One of them was filled in independently in order to check if the research tool could be autonomous during the whole process. This testing was crucial because the aim was to design a questionnaire which could be completed without any external help. However, it was

²⁸ Designed by Butler in 1980

important to assess some aspects of this procedure which could decide its success or not such as: if the questionnaire was understandable; how the owner felt when it was being filled in, and which type of barriers could emerge during the process.

Therefore, taking all of these factors into consideration, another questionnaire was completed in the presence of the researcher. The pilot project started with the last one, revealing potential controversial points which need to be clarified or completely removed such as:

The vague reference in the introduction text about the anonymity of the data and the protection of the data under the law. This point which also had become an issue during the tourism round, was quickly resolved with the inclusion of a specific paragraph about it in that first part of the survey, making reference to the Data Protection Act.

To aim to make clearer the section about the business turnover, different options in regard to the period of year of finances, those which would be displayed, were included.

Thirdly, the tax items were always in the background trying to discover how to handle it in the whole questionnaire. For one hand, the methodology demanded that the turnover should be given in pre-taxes way, in order to know better the genuine flow of money from the previous tourism round. But on the other hand, it was important to know how much of the revenues became taxes in order to consider them as leakages of money from the local area. This issue was fixed with a note before the question about turnover (no. 4)

It is important to highlight that this financial information should be pre-tax and incorporating a sub question (no. 5.7) after the first table about general items:

5.7 Although the financial information demanded here should be pre-tax, we need to know how much of your turnover goes to your local government as tax. So,

Rates tax: £.....

Last but not at least, the table associated with the staff information, needed an explanation and the adaptation to the flexible labour conditions implied in the tourism industry. As has been explained previously, this sector is strongly influenced by the weather and therefore this factor is also reflected in the labour shifts and their salaries. So, displaying these figures here was not so easy as it had seemed at the beginning. Consequently, this labour flexibility was taken into account asking for the salary in £ per hour; no. hours per week; and finally

no. week per year (season), and all of these data referred to a “typical week”. In addition, an explanation about the reason for requiring this information (for the last round, the third one, in order to work out the economic multiplier effect) was included before the submission of this table. Later, the “double check” was carried out with the submission to another owner of the dolphin watching business (in an independent way). This short testing gave the approval to the questionnaire. However, at that time it was decided to test it with a business outside the dolphin watching sector and an owner of a souvenir shop was the volunteer for it. This last review provided an important contribution to making the questionnaire more "comfortable" among owners: giving the option to indicate the turnover inside a range in order to avoid writing down the exact figure which was the most sensitive question in the whole survey (question No. 4)

You can choose one of the following ranges:

- 1 Up to £ 20.000 2 £ 20.000 – £ 40.000 3 £ 40.000 – £ 60.000
4 £ 60.000 – £ 80.000 5 £ 80.000 – £ 100.000 6 Up to £ 100.000

Finally, after this trial, as the outcome of that first step, the questionnaire for the business was ready (see the appendix 3). This research tool was divided into three areas: an introduction text as usual and two sections of questions. On the one hand, as the ethical guidelines demand in these type of projects, the introduction text had as objectives: explain briefly the project; show the importance of the participation of the businesses; and as was explained previously, being clear with the anonymity of the data and its protection under the Data Protection Act.

While, on the other hand, the investigation was started with the following sections:

Section 1: Business profile. Comprised of 3 questions (from 1. to 3.) with a classification about the different types of business which are included in the tourism activity and its supporting network.

Section 2: Business’s finances: How is the organization’s turnover spent?. The core of the survey, formed by question no.4 and no. 5, tried to outline the different paths of the money

from each business, in order to reveal the impacts in the local economy. For this purpose, the following note inside of this section summarized the aim of the project:

Note: if your expenditure is in New Quay or in the county, please try to give exactly **the name of the place.**

The financial information requirement started directly with the key question number 4.

Approximate Turnover in that period: £..... OR
in the range mentioned .

Following this, once the data to be displayed was decided by the owner of the business, annually or monthly, the submission of the monetary information was broken down into three tables. But prior to this and being aware that this task could become tedious, the option to show the financial data in £ approximate or percentage was given. The tables were concerned with general items: such as fuel, rent or repairs; and suppliers/ subcontractors. These two first tables contained three columns to indicate if the expenditure were made in:

New Quay - Cardiganshire /Ceredigion County – UK or Overseas

Furthermore, the last table related to expenditure on the staff demanded a more in depth breakdown in order to give useful information for the last round of the methodology: domestic finance of the local population through consumption habits of the staff of these businesses. Items like gender, age and type of contract (full time, part time or seasonal) could shed light on the effect on the employment which the dolphin watching industry was generating in New Quay and its surroundings.

The folder for the business owners was completed with a hand-out, prepared with information about the methodology and some preliminary findings from the first round in order to share with them the aim of the study and their characteristic of “cascade” of information: being the next push for the flow, the business information (see the appendix 4). In a similar fashion to the first round pilot project, this testing period helped to build some perceptions about the tourism structure and its key players which permeated the whole picture. In this process, the anonymity of the data and how difficult it was for owner of the business to declare their turnover, were revealed as a factor which would mark

dramatically the grade of success of the next step, the data collecting of this second round. During this trial period, it was already clearly evident that sensitive information would become a major issue. At the same time, the lack of organization of the local business network, perceived during the informal conversations with some owners during the field work, emerged as a constraint to spread the word about the importance of this project in and for the community.

Third round: staff questionnaire

The last survey was followed a similar path to the second round, due to its association with the target group: staff of businesses identified by the dolphin watchers. Its design was also completed during September, following the guidelines of the previous questionnaires: information about the polled person to build the profile and financial data as the core of the survey. Apparently, this last questionnaire should have made it easier to obtain the data than previous ones because the required information was less sensitive. The questionnaire was divided into three parts, the project being introduced in the first one (on the front page), as was included in the business one but this time with the importance of the participation of the staff. Following that, the survey started with **Section 1: About you.** Subdivision consisting of nine questions (from no.1 to no. 9) where the objective is to draw the main characteristics which define the employment of tourism in New Quay. Age, academic background, type of employment or residence helped to discover if this holiday destination was creating steady employment, otherwise jobs are temporal and non-skilled even if this location required skilled staff from outside the region. The next and last part was **Section 2: About your finances.** How is your salary spent? In two questions (no. 10 and 11) the most important data about the personal expenditures was asked. As happened with the second round, the question about salary was controversial and difficult to pose. Finally, it was resolved in this form:

The information in this section relates to your personal finances. Please give your answers in terms of you weekly or monthly pay:

1 No. hours per week: Salary per week: £..... OR

2 No. weeks per month: Salary per month: £.....

This data is related to which month:

It should be pointed out that this time the finance data was required post-tax, because this final group spend their salaries once the taxes had been deducted.

The table of the question no. 11 was built by the main items of personal spending. These categories were the result of informal conversations with some volunteers who were working in the Centre at the end of August. In addition, the personal experience of the researcher, who lived there, contributed to the defining of the finance table of this questionnaire. The data should be displayed monthly or weekly.

The validation was done during the last two weeks of September with three members of staff of two different dolphin watching businesses. Different positions; gender; age; and origin were tried to test the variety of factors which can be affected during the completion of the questionnaire. At the same time, two of them were completed independently and another one in the presence of the researcher. On this occasion it was not necessary to make any extra adjustments before its submission within the entire business folder as has been explained above.

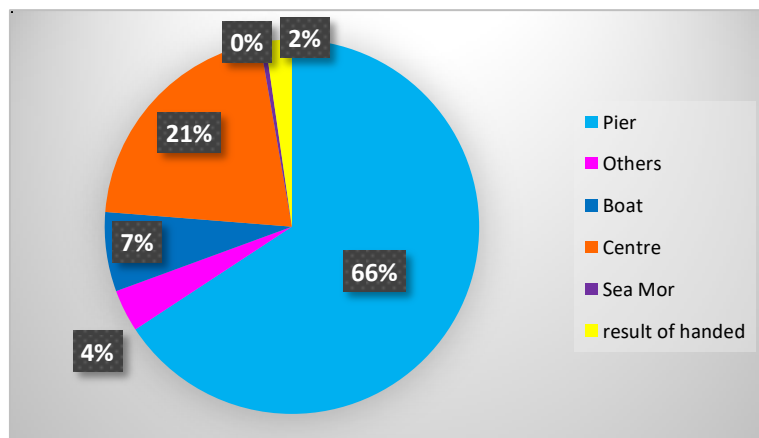
The participant observation during this part of the pilot project has shown that this questionnaire was the most accessible research tool by the polled people. Therefore it was not expected that its acceptance could be an issue. However, it is important to mention that there was a special concern regarding this group, because the informal chats during the tourism round revealed that the majority of them were seasonal staff, therefore the submission of this survey had to be as soon as possible before they started to go back their homes (close to New Quay or other destinations within the UK).

4.4.2 Collecting data

This stage of the study, considered the core of the project, aside from having as the main objective to gain the data, also was focused on three structural tasks of any research process: reinforcing perceptions; overcoming constraints; and acknowledging the limits. Primarily, it needs to be again pointed again that with regard to the collection of data, the process (as the methodology demanded) was divided into two stages (three rounds), in which the questionnaire was the chosen tool for all of these phases.

First stage: Tourism round

The sampling was addressed following a convenience pattern among dolphin watchers, attempting to get a representative sample of the population of interest. Once, this target group was identified, the selection of the respondents did not have to follow a guideline. Therefore, the strategy was to try to cover the wider variety of respondents as possible, taking into account variables such as type of holiday party; gender; generation; type of trip and the different clients of the three dolphin watching businesses.



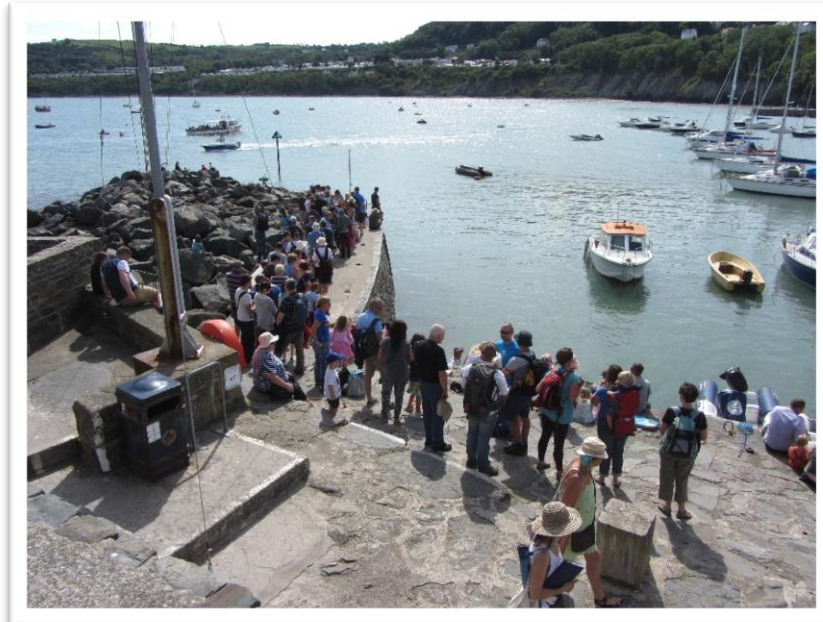
**Graph 1: Collected questionnaires by location (%).
New Quay, summer, 2013**

As well as this, remembering the rule of thumb “quality before quantity”, no requirement of size beyond an interesting representation of tourism volume which visited the area in the peak season was established as an objective.

To achieve this general aim, the field work was carried out in summer, delivering the questionnaires during six days per week of that month. The work on the pier during July and August was rewarded with 144 questionnaires in different locations as graph 1 shows. In this sense, the strategy of sharing boat trips with tourists, while it did not contribute to an important amount of surveys, it did provide those with the highest quality; and the conversations with tourist during the trips helped significantly to confirm some perceptions and observations by the researcher.

Initially, taking boat trips was considered as part of the strategy of collecting data as result of the pilot project. It meant that, the procedure was thought to mix days working only on

the pier with other days working on the boat trips. However, due to the poor outcomes, that strategy was re-considered and working on the pier was to become the only approach during the next two weeks.



Source: Field work on the pier. New Quay 2013. Olga Garcia

That decision was supported by the high presence of dolphins at that moment which reduced dramatically the dead times during the boat trips. Consequently the likelihood of obtaining a good number of questionnaires on boat trips was low. Following this period, the approach on boats was taken up again, being an important strategy during the last part of the month. In total, 10 boat trips were taken during the field work in August. In this sense, in the same manner as during the pilot project, the balance between covering the biggest variety of type of tours as possible, and achieving the aims of the project was the guideline. However, as was decided previously, the boat trips with less than 12 passengers carried significantly more weight in the final quantity of tours taken: 7 out of 10 boats, that is 70%.

A similar portion followed the length of trips chosen, achieving 60% for the longest ones. With regard to the different times of day, the sample covered equitably all of available three periods of day: morning, lunch time and afternoon. Likewise, the decision to involve the Centre in the distribution of questionnaires was a success, with an interesting input of 21%.



Source: Field work on the boats. New Quay 2013. Olga Garcia

This field work, as in that which happened to the pilot project, had to face some challenges which generated, in turn, some reflections to consider.

Changes during the work with tourists

In general, the survey was still proved to be tedious for the majority of tourists and for some of them nearly impossible to complete properly as the methodology demanded. These situations were very clear with tourists who came to New Quay as part of a long trip: the longer their holidays were, the more difficult it was to answer the questionnaire correctly because it was a true challenge for them to remember all expenditures and where they had been made. That point became an insurmountable obstacle.

For the rest of the target group, visitors on holidays of one week as an average, the questionnaire was also an “annoying” task, affecting significantly the quality of the data. Therefore, removing intrinsic characteristics of this type of surveys became the main concern during whole field work. As a result a tough decision had to be made: to sacrifice the “purity” of the methodology to make the questionnaire easier. Asking the tourists to indicate if their expenses were at local level – New Quay or inside the county - and at non-local level. Consequently, the link between the territory and profits from visitors was

significantly simplified. This change allowed for core of the questionnaire (section 3: holiday budget) to be completed with better data: more inputs and better quality although at the same time, the obtained data was more basic. This modification was not incorporated in the questionnaire, deciding to keep the same survey but explaining this crucial change during the small introduction when the tourist was approached. This explains why some questionnaires completed without the assistance of the researcher, such as the ones collected in the Centre, were complemented with more specific data. However, in spite of this new effort at improving it, there was still clear confusion among polled people in regard to filling it in with the all of their expenditures and not only with those made in New Quay. This misunderstanding could not be resolved and was remained a frequent occurrence during the whole field work time. Additionally, some operational adjustments had to be incorporated to improve the access to the target group. As has been described above, the capacity of dolphin watching businesses was not the same for the three of them. Therefore, approaching to visitors from the most crowded boats became a priority at the beginning. However, as was also explained above, the accessibility was more complicated, and as a consequence, the delivery of the questionnaires after the trip while they were disembarking from the boat, was considered as the strategy to address this issue. Nevertheless, despite the numerous efforts to carry out this resolution, the degree of success was considerably poor.

Another example of these types of learnt lessons was to check whether the tour in a Rigid Inflatable Boat allowed conversation between tourists because every passenger is sat down in a row during the whole trip. Under these conditions it was impossible to explain the project and to request their collaboration. For that reason, this tour was taken only once.

This grounded work obtained as results the confirmation of some perceptions became clear during the pilot project and the building of others.

Conversations with the research diary

As part of the methodology, the observation of the target group was critical to understand the tourism dynamic in order to discover how the money from dolphin watchers could flow through local business. In addition, informal chats with tourist during the boat trips or

“waiting times” on the pier while the questionnaires were being completed contributed significantly to the outlining of this tourism picture of New Quay. During this procedure, some specific reflections came up:

The reaction caused by the topic of the questionnaire to the tourists, local economy” or “local developments”. These concepts nowadays enjoy a great deal of social support. For that reason, once the aim of the project was explained to the tourists, the frequent perception was that tourists tried to create a certain “balance” with their local expenditures. The necessity to show themselves as good supporters of a laudable goal was becoming a bias in this study in which real habits are the core of the project. In fact, as has been previously explained, in spite of all attempts to clarify the objective of the survey, the error related to displaying the expenditure in the local area only was frequent.

The significant importance of the accommodation in the current tourism structure, especially the caravan site option. This strong tradition rooted in the UK, defines the present character of the tourism in New Quay. Therefore, this factor should be a core topic for future studies. Indeed, it could be the responsible for future transformations in the entire tourism industry if tourism preferences about accommodation option were modified. In this sense, according to the surveys the private cottages are gaining ground as a holiday lodge option. However this second alternative would not be a meaningful change because the market is evolving towards this not dissimilar accommodation option. The reluctance of some British tourists to take a boat trip, therefore the option of land-based dolphin watching was a genuine choice for them. For further studies, this target group could be added to the volume of tourists who come the destination because of the marine wildlife and although they do not take part in the activity at the same time, they contribute to the development of the area through indirect expenditures.

The profile of visitors. Through observation, the conclusion could be reached that New Quay was a mass tourism destination. Despite the fact that dolphin watching activity was becoming more and more popular, the main target group could be still considered non specialist tourism. In spite of this, three groups could be categorized:

3S tourists: sea-sand-sun: frequent visitors of New Quay, not usually interested in dolphin watching. Good weather and one of the few sandy beaches combined with a large site for caravans make attractive this destination to this type of the tourist. Their expenditures are related to grocery shopping, food and drinks, and snacks during their long stay. Although it was the most numerous group, they were not the target for this study, dolphin watchers.

Casual visitors attracted for all features of New Quay including the dolphin watching activity. Because it is not their priority, they try to get the best price for their interest: the cheapest boat trip. Their spending is focused on fish and chips, ice-creams and souvenirs as examples.

Specialists who came to New Quay only for watching dolphins. Since it is the only reason for their visit, they chose the better boat trips: less people on them but more expensive. They are not big contributors to the local economy because they usually bring their own meals and end up buying only snacks and souvenirs during their day trip in New Quay.

Second stage: Business and staff round

The submission of the business questionnaire was started on 3rd October and continued two days later, on 5th, collecting some staff questionnaires from the first day.

During these two days, the most popular businesses for the tourism related to dolphin watching activity were visited. The

list of establishments (table 7) was drafted from the inputs of the first round supported by the observation regarding tourism behaviour during the field work on the pier. The flow

Table 7: Local business invited to take part in the survey

<i>Type of establishment</i>	Number
<i>Dolphin watching tour operator</i>	3
<i>Accommodation</i>	5 (caravan site- cottage- hostel)
<i>Food and drinks</i>	16 (2 supermarkets)
<i>Souvenir</i>	7
Total =	31

of tourists after the boat trips coursed through the two main streets of New Quay on the seafront, Glamor Terrace and Church St principally, where the main tourism businesses were located (Figure 8).

Figure 9: Flow paths of dolphin watchers. New Quay, summer 2013. Blue line



Source: Google maps. Field work of this study. Olga Garcia (2014)

The procedure was simple: firstly, to ask for the person in charge; secondly, to introduce the researcher and the project, showing the folder with all the documents: the hand-outs and questionnaires. It is important to mention that this data collection was referred to both last rounds. Therefore, staff questionnaires were also included in the folder in order to encourage the owners to involve their staff in it. And thirdly, to ask them when the best time for collecting the questionnaires is.

This first approach did not have the expected welcome. The interest of business owners in taking part in the survey decreased when they noticed that financial data should be included. Despite efforts to explain the aim of the project and its rigorous anonymity by the researcher during the first contact, the perception was one of poor collaboration. Therefore, another stage of re-design was carried out promptly. In this second review, other difficult methodological decisions were made:

Business questionnaire: removing the controversial question about the turnover (question no. 4) and adapting the entire survey to show only percentages. To achieve this, the three tables concerning the finances were converted into “calculation tables” at the end of the questionnaire. This decision also meant losing the last opportunity to link the expenditure with the territory, because the location of the spending was asked in these tables. Therefore the discovery of the money flows was removed completely for the expected results of the project.

With the following explanation, the polled people were encouraged to use these tables as an aid for calculating the percentage.

Please note that we are only looking for percentages, not financial figures, which we appreciate will be sensitive. In order to help you to work these percentages out we have included some calculation sheets, which we would like you to keep (we do not require these to be submitted to us).

At the same time, the table about general items and suppliers/subcontractors was combined within a single one. See the appendix 5 for more details. Furthermore, the table of the staff questionnaire was made easier: thinking monthly and calculating the staff cost according to the number of workers in each type of contract (part time, full time or seasonal).

Staff questionnaire: At the beginning of the round, this last survey was slightly better received than the second one. However, its collection was quickly ran into problems as it had the same issues as the business questionnaire with respondents feeling that information was too personal to be shared. Consequently, it was modified exactly in the same manner as previous one: making it more reliable. The question about the salary together with the table was converted into an annex, for helping to work out the expenditures. And only the percentages were the required data on the questionnaire (appendix 6)

Once the new versions of the both surveys were designed, its delivery was carefully thought out. This time, the involvement of other interlocutors was the strategy to follow: an owner of dolphin watching business and the main supervisor of the study, joined with the researcher to visit the majority of businesses again, showing the new survey and explaining its purpose. In this case, the procedure was slightly altered. An envelope with the university address, plus a stamp, was included in the folder in order to facilitate its

return by post and at the same time to further guarantee the anonymity. This second attempt was carried out on 30th October, awaiting the completed questionnaires by post. Again, in spite of this new approach, the attitude was similar to the first one: they, owners as well as staff, seemed reticent to the idea of sharing their finances with outsiders (University), although now they had to show only the percentages. With regard to the staff, the majority of them, who had been there during the summer season, were now away from New Quay. Therefore their participation in the survey became more complicated. The usage of emails to submit the staff survey was considered but the businesses did not facilitate this information (many of them are micro business which do not keep record of this type of information). The first business questionnaire was collected from the mail on 6th November 2013.

In the absence of positive answer by the businesses, the collaboration of the owners of the dolphin watching activity was required during the following months, as advocates of the project among the community and their business colleagues. At the same time, other visits were carried out during the first trimester of 2014, but with the same unsatisfactory results as the previous or even worse because the majority of businesses usually are closed during the early months of the calendar year. Concurrently, a digital submission version was explored as well. A series of emails were sent to the main group of local businesses on 29th January 2014, with a "special invitation" of the main supervisor of the project to join the study. The request for information was once again disregarded. The organization of a meeting with all of these owners of businesses was also an idea which was put forward. However, after several proposals to the businesses associated with the study (dolphin watching tour operators) for arranging this event, the initiative was discouraged, underlining the disunion among the local commerce sector as a main reason. The last attempt was made on 21th May, when all of businesses were opened again, ready for the next season, 2014. The procedure was more informal, with a quick round for some of the most interested business in the study during the previous conversations. The objective was to convince at least these establishments to share their data. In this visit, a mixture of laziness and difficulty in the questionnaire were the reasons argued by them to explain their lack of participation. Moreover, it was checked that some of them had not reviewed the last version of questionnaire due to the fact that they still insisted on refusing to write

down the real figures. However, because of the relaxed atmosphere during these conversations (informal interviews), the researcher could gain an estimate of how their business expenditures were divided into local and non-local spending. This non-structural approach was more efficient than all the months of making adjustments to the questionnaires. It was easy, simple and convenient for the owners to talk about it (in terms of percentages) which proved that another method should have been implemented, although that meant not to keep the quantitative character of the LM3.

In terms of the study, it was too late to inconvenience businesses again with this “new qualitative approach” due to the fact that our image as researchers who are interested in obtaining their private figures was already too consolidated. However, it is an interesting learning lesson to consider for future study.

4.4.3 Research limitations

Every research study has to face some constraints during the different stage of the study. In this case these challenges played a key role during the field work and hence, their impact in the data and its interpretation was significant. However, as is shown through this quote (from a study about economic evaluation of dolphin estuarine watching carried out in Brazil) these research difficulties are more common than they expected:

‘Despite the considerable number of tourists that went to Cananéia specifically to see the dolphins, only 23 supplied all necessary data about their expenses and incomes in the interview’. Filla *et al.* (2012:108)

These challenges, as research limits, should be taken into consideration separately in order to show the complexity of this type of grounded approach; and to show in a wider field that the current research scenarios which academics have to face are more dynamic and therefore some strategies should be reconsidered. To begin with, the context where the methodology had to be implemented was during the main summer holidays. The predisposition of people changes according to the environment where they find themselves. In recreation times, individuals tend to be relaxed and their priorities are more related to having personal enjoyment than they usually are, therefore themes such as finances are not ideal for this type of situation. Additionally, if the manner to gain the information is something inherently formal such as a questionnaire, the task becomes more complicated. Who wants to complete a questionnaire about expenses when your interest is to have an

enjoyable experience with friends on a trip boat watching dolphins? This rejection was estimated to be around a 50%. This limitation of the context was decisive during the first round however, and it affected the next rounds as well. The owners of businesses as well as their staff were so busy during the peak season that it became inevitable to wait for the close of the season, October for the next rounds. However, by that time, many of seasonal staff had already returned to their homes, and some owners of business were focused on closing their commerce to spend the winter in warmer countries (like Australia). In other words, no moment proved to be an ideal time to encourage business owners and their staff to fill the questionnaire. As a consequence for these two last rounds the rejection level was around 80%. In the same argumentative line, questionnaires are a challenging task to do for these type of target groups: they remind them of a “working paper”. For that reason, in the first round, visitors with academic backgrounds were more interested in completing the questionnaire than others with more “technical” qualifications. On the other hand, in the second round, the majority of owners of local business, micro business, where there is not a complex structure, were reluctant to spend their time completing it: it was too complicated or they felt that they needed to think too much. Secondly, the theme of the entire project, finances, sensitive information for all sectors, represented the main research challenge for this grassroots approach. In the tourism and staff rounds, this first rejection was experienced; however, it was in the business round when this negativity became an issue. Some of polled people felt offended by the questionnaire without considering an explanation of the aim of the study. As the theme of the project, this barrier could not be overcome, it was simply attempted to improve the approach and the survey.

The next element to consider in this list of challenges was the method (LM3) which demanded the combining of territory with expenses. It meant that the survey asked for names of establishments where tourists had made some spending. Consequently, the memory factor emerged as a key element when this methodology is implemented at ground level, compounded again when individuals are in ‘holiday mode’. Without starting a deep discussion about how the memory works, it is important to point out some basic concepts to understand the reasons why this obstacle remained constant through the entire data collecting in the first round. The memory is the process which works as a mechanism for recording, archiving and classifying information. The human memory works at different

levels and with different efficiency as well as depending on factors such as age, significance or meaning for the individual. The first level is called the short-term memory or working memory which helps the person to handle the environmental information. This information remains for around 15-30 seconds on average and its transfer to the long-term memory is influenced by the effect of primacy, recency and significance. In other words, facts which happen at the beginning in one situation or at the end have more probability to be remembered than those which occur in the middle. This rule could be modified depending on the meaning that the person gives to the fact, being a key factor to this transfer. Therefore, the capacity of storage of memory is selective. According to neurologists

“It is easy to memorize what we want, especially if you have a relationship with a hobby, profession or feelings are involved, information deemed important. Therefore, despite effort and having sufficient capacity, memory seems unresponsive, refusing to function, which may be due to: lack of real interest²⁹” (Orozco, 2014, no page)

This lack of attention due to not having any emotional link where you are having breakfast or refuelling the car during your holidays, was critical in this study. At the same time, another factor related to memory was decisive: the process of consolidation. In short, the storage of new information is done through the creation of new synapses. The brain has to be able to establish these new neural connections to build new memories. For that reason, elderly people remember facts better which happened in the past, because the younger you are the better the ability works. This mental procedure and their failures are more relevant in bilingual territories like Wales. The habit to name the businesses commerce in Welsh is widely extended in all regions therefore, apart from thinking about expenses, the tourists had to usually remember Welsh names and spell them correctly. Despite the fact that New Quay is still a domestic destination, it is important to point out that the main group are from England, and are non-Welsh speakers. This combination of the memory issue and Welsh names, triggered some difficult decisions which had to be made during the field work: avoiding elderly people, overseas visitors, and long trips and finally to divide the tables of questionnaires into more general boxes (New Quay, Ceredigion/ Cardiganshire, UK or Overseas). This last decision became a significant tipping point in methodological approach which was carried out in the third week of August. This constraint did not have the same

²⁹ This quote has been translated from the original version in Spanish to English by the author.

effect as in the other rounds because owners of business and their staff (although some of them were not originally from New Quay) had more time to integrate these places in their memory as familiar names.

Another factor to contemplate was the lack of formal business structure locally. The absence of business association affected the manner in which to approach the community, especially in the second round. As a result, this challenge became a communication issue because there was not a unique interlocutor between the research team and the commercial sector of New Quay in order to transmit the benefit of this project for the near future of this holiday destination: to give an economic value to marine wildlife tourism in the region. This lack of the coordination in the business sector brought another consequence, the idea that this study could contribute to a “call effect” for potential competitors. This led to the interpretation by some owners that if they showed their figures, some people could think that New Quay was a financially lucrative location and could come to the town in order to set up a similar business to theirs. Indeed, this lack of coordination had already been identified by the sector: the answer of operators about how to improve tourism, was related to marketing, product improvement and co-operation between businesses (according to The Tourism Company, 2011). At the same time, this reflection goes to the last but not least limitation, the small amount of trust in the University by the community due to the lack of sufficient time to become acquainted with each other. As a result, the issue of anonymity was always considered with suspicion by all sectors but especially among business groups. The University represented officialdom in their lives, so why am I going to tell them my private expenditures?

Table 8: Grade of influence of challenges in the LM3 rounds. New Quay, season 2013.

Challenges	Tourists	Businesses	Staff
<i>Strong Influence by the holiday context</i>	High	Low	Medium
<i>Tough questionnaire: “working paper”</i>	High	High	Medium
<i>Sensitive information: Finances</i>	Medium	High	Medium
<i>Necessity to remember the Welsh names: Tough questionnaire</i>	High	Low	Low
<i>Lack of formal business association</i>	Low	High	Medium
<i>Fear of provoking a call for potential competitors</i>	n/a	High	Low
<i>Lack of a strong link with the University</i>	Medium	High	Medium

Chapter 5. Data analysis; results and discussion

The collected data brought together information from: 219 questionnaires in the first round which contained financial figures for 800 people; 6 business questionnaires related to 4 sectors: leisure, food and drinks, accommodation and souvenirs; and 19 questionnaires which included expenditure habits of employees; waiters, managers, boat skippers or receptionist amongst others. Additional relevant information about the context was obtained through informal conversations with the key players adopting a participant observation and an ethnographic approach. Based on this pool of data the tourism scenario could be described, highlighting some tendencies and supported by statistics.

To begin with, 219 family groups who took part in the survey during the summer season 2013 provided interesting evidence about the current stage of the marine wildlife tourism in New Quay. Based on their participation, the profile of the marine wildlife tourist in the region was elaborated. First at all, their interest in dolphins was tested to provide a filter mechanism for the whole volume of tourism in this town.

5.1 Dolphin watching activity

5.1.1 About the interest in dolphin watching

The reasons a destination is chosen are a key factor to understanding the type of market which was being attracted by this location. In regard to the motive of the trip, they could be categorised in terms of their interest in nature when choosing a specific destination (Boo, 1990 cited in Mehmetoglu, 2007:205). In this case, the figures, from section 1 in the questionnaire, confirmed that around 79% of dolphin watching respondents affirmed that the presence of dolphins in the area weighted more than 50% in the decision to come to New Quay (table 9). Of these, 28 % stated that the dolphins were the sole reason (100%) for coming to New Quay. Only 14% had a low curiosity for dolphins, which is not surprising given the dolphin-oriented nature of the sample.

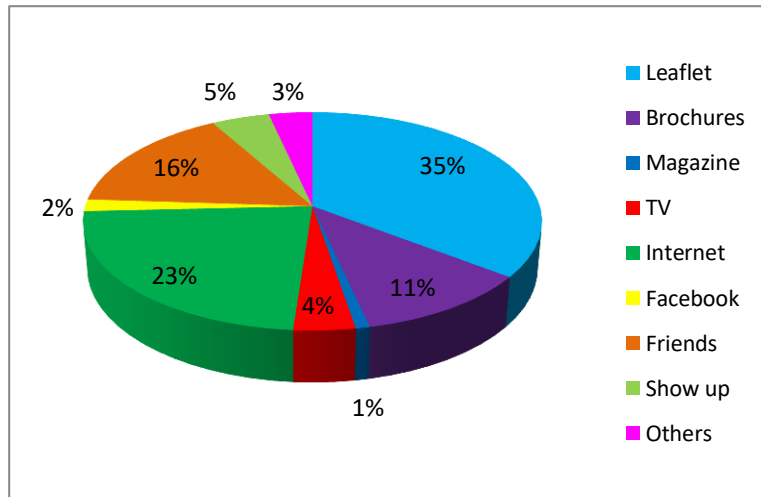
Table 9: Level of interest in dolphins of dolphin watchers. New Quay, summer 2013

	100-76 %	75-51%	50-26 %	25-0 %
<i>Number of respondents</i>	109	31	33	27
<i>percentage</i>	54	15	17	14

The question regarding whether they have already visited the Cardigan Bay Marine Wildlife Centre obtained 50% of positive answers. Although it is pertinent to clarify that users of one of dolphin watching tours had to book their trip via this Centre, therefore some answers could be skewed (around 32% , of visitors were related to this business). In addition, for those still intending on taking a trip, revealed that among the 89 out of 100 survey respondents who showed their willingness to do so, the Red business was the most popular option with more than the half of volume (54%), followed by the White and Blue tour operator with a 25% and a 10% respectively.

All of these answers strengthened the perception that this destination is undergoing a transition from a non- specialist to a specialist market. This hypothesis only will be able to confirm with assessing the development of the activity during the next years. On the one hand, the majority of tourists felt a link with dolphins but at the same time, the cheapest boat trip, which was not designed for specialist tourism, - held the biggest group of visitors. Therefore, a certain trend started to emerge within this mass tourism destination where the interest in dolphins was becoming more and more a reason for coming. In this sense, according to the last Tourism and Visitor Economy Strategy for Ceredigion 2011-2020, the clients of serviced and non-serviced (self-catering) accommodation confirmed that the main reason for visiting Wales was the scenery/landscape/countryside with over 70% of respondents in both lodging options, slightly followed by the interest in the coast and beaches. The natural resources were still capturing fewer adepts but at least it was on the list of considered features.

With regard to the sources of information, graph 2 highlights that among the polled sample the leaflets were the main channel of publicity (35% plus 11% from brochures). Dolphin watching activity nowadays is advertised through several different media such as brochures, internet or TV. However, the majority of tourists knew this activity due to promotional material (flyers, brochures or leaflets) which are distributed in accommodation locations such as caravan site or specific dolphin watching businesses in New Quay.



Graph 2: Sources of Information. Dolphin watching. New Quay, summer, 2013

The second popular option to publicise this marine wildlife hotspot was the internet (23%). This identifies another important step for attracting a bigger market for dolphin watching: specialist tourists. In spite of this increase in the online channel and the use of social media such as Facebook, the classical “word of mouth” publicity was still important among tourists, with friends as 16% of information sources. These figures support the image that New Quay is a family holiday destination, where people who have a caravan or have been spending their holidays for long time there, unofficially publicise the attractions of New Quay through advice or brochures. Indeed, last year New Quay as a dolphin watching hotspot was shown on several TV programs such as the “One show” and “Britain's Big Wildlife Revival” on BBC; and “Coast and country” on ITV wales, which helped to make it visible among main market of English visitors. However, this was not highly ranked as an information source by respondents.

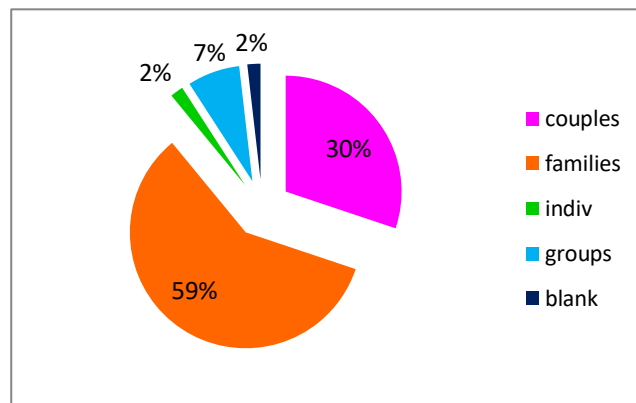
Having understood how important the presence of dolphins in the area was for the tourists, the next step was to discover more information about them in order to build a profile of dolphin watchers in New Quay.

5.1.2 Profile of dolphin watchers in New Quay

The profile of respondents was formed according to gender, age, education level and type of occupation - in *section 4: About you* - in the survey.

Respondent tourists were 61% women; however, this does not mean that the female gender was more predominant than the male gender, because according to participant observation the main market was consisted of families (classic concept). Therefore, this gender imbalance could be explained by a predisposition among women to help in this type of study. In fact, a certain tendency in which the “mother” waited on the pier while the “father” was with children on the boat was subtly observed.

Furthermore, the different types of party were recorded through the survey (graph 3). According to this sample, the main group for watching dolphins was still families with children, nearly 60% of the total, being slightly more visible during July and August which coincide with the school holidays. The average was of 2 kids per family.



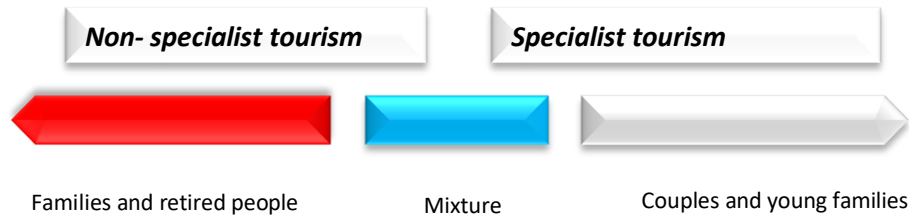
Graph 3: Types of party. Dolphin watchers. New Quay, summer, 2013

This result reinforced the idea that New Quay remains a family destination. However, at the same time, the couples are significant – 30% - , which could mean a shift to a specialist destination. This market is less concerned about the price of a boat trip and more concerned about the willingness to participate in other activities other than enjoying the beach. The latter is the main reason for family groups to come to New Quay.

Table 10: Type party of dolphin watchers, summer 2013. New Quay

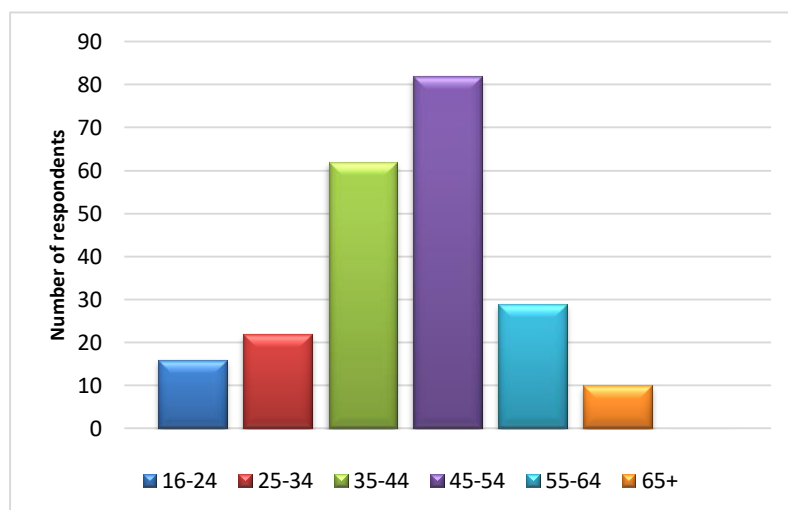
	No.	%
<i>couples</i>	66	30.13
<i>families</i>	129	58.90
<i>single</i>	4	1.82
<i>groups</i>	16	7.30
<i>blank</i>	4	1.82

In addition to this picture, the participant observation on the boats could achieve a certain classification among the three different businesses, which contributed to locating them in the following range of specialist vs non-specialist:



For comparison with other studies consulted such as the last Tourism and Visitor Economy Strategy for Ceredigion 2011-2020, visitors who chose self-serviced accommodation (the first option for dolphin watchers) was composed of 57% families and 35% couples on their own, which is a similar profile to the sample of respondents.

With regard to age, the respondents filling in the survey were characterized by middle-aged people, with groups of 35-44 and 45-54 more popular as graph 4 shows. By contrast, the youngest sector (16-24) and oldest sector (65+) was less represented (although these could have been part of family groups).



Graph 4: Age segments. Dolphin watchers. New Quay, summer, 2013

Taking into account that tourism in New Quay is still supported by residents of caravan sites who have been coming for a long time, it was expected that middle-aged people are the biggest group. However, because the selection of survey group was the interest in dolphin

watching, regular visitors were not the objective of this study. At the same time, encouraging the youth to take part in the survey was a constant challenge during the entire field work.

Observation identified a weak presence of young couples, more related to the day trips or holiday trips in New Quay or nearby. Consequently, they could well be from the area or students from the nearby Universities³⁰.

The employment situation was the next area to define. As a family holiday destination, most respondents were employed (72%); followed by retired; and without any unemployed respondents (table 11). This lack of jobless respondents could be interpreted as a result of a labour condition whereby it is less probable that tourists under this condition would pay for a boat trip or because of the social stigma attached to this response. This status is not revealed in the questionnaire.

Table 11: Employment situation of dolphin watchers. New Quay, summer 2013

	Employee	Self-employee	Retired	Student	Home maker	Unemployment	Other
<i>Number of respondents</i>	163	20	23	9	9	0	3
<i>percentage</i>	72%	9%	10%	4%	4%	0%	1%

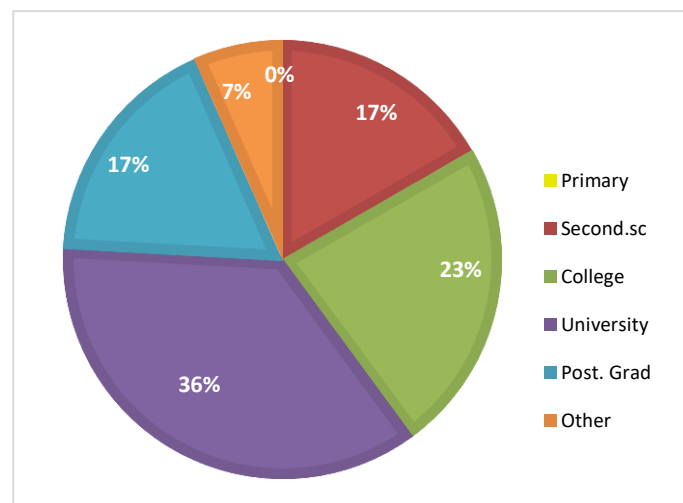
Although, as was explained above, the elderly segment was approached consistently, they did not represent the main group of dolphin watchers in spite of their importance for the entire tourism in New Quay as a frequent destination for retired people who are owners of caravans.

Lastly, the level of education contributed to describing the profile of the tourism market. In this sense, graph 5 reveals, from the questionnaires, that the majority of dolphin watching tourists had a university or postgraduate diploma: 122 out of 219 respondents. It meant that 53% had a tertiary education; this is in line with other research on nature based tourism, which indicates a higher proportion of those with degrees. This finding would reflect that this destination was attracting a specialist market. However this result could have a significant bias due to the difficulty in the completion of the research tool: the

³⁰ Perception supported by one owner of dolphin watching tour (personal communication, 2014).

questionnaire. This limitation most affected the approach to big groups in the cheapest boat trips, because of the appearance of paperwork and respondent burden.

As a result, this group was not duly represented. The fact is that these tourists could have more "college" certificates according to the informal "chats" with these tourists on the pier or during the boat trips. Nevertheless evidence of the mentioned transition could be given: an interesting portion of higher education background and employed. These two factor combined make the market closer to the specialist one.



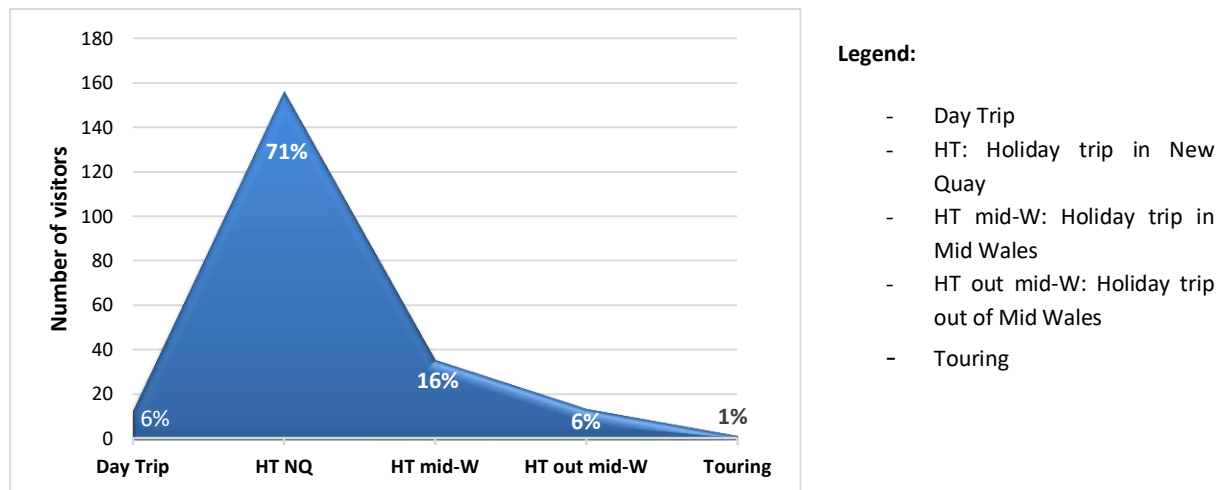
Graph 5: The highest education certificate. Dolphin watchers. New Quay, summer, 2013

The next aspect to explore was the existence of any specific characteristic which defined the visit of dolphin watcher in New Quay in order to understand their necessities related to services and facilities.

5.1.3 The journey of dolphin watchers to New Quay

The first feature was to discover who was visiting New Quay for dolphin watching: national or international tourists. In this sense, the data about the origin of the survey respondents confirmed the obvious observation, the big picture about tourism in New Quay and surroundings could still be described as a destination for a domestic market with 92% of British people (or residents). However, considering the difficulty of remembering Welsh names which is demanded in the questionnaire, during the field work other nationalities may have been underrepresented; therefore the bias about the origin has to be considered.

But, at the same time, according to participant observation, this result was validated and it could even be more specific: among all UK citizens, English tourists from the Midlands were the main group in New Quay. This observation was supported by the 93% British visitors in Wales (29% from within Wales) assessed by the report T&V-Ceredigion 2011-20.



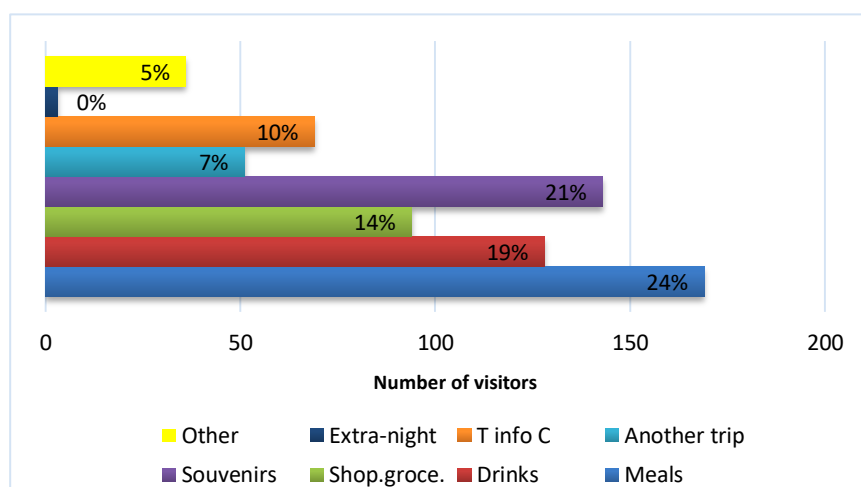
Graph 6: Type of visit (%). Dolphin watchers. New Quay, summer, 2013

The next factor was to study the formula of holiday trip (HT). In 2013 Wales was the only country in Great Britain to report an increase of 3.4% in the number of trips of domestic tourism in comparison with the previous year, 2012. Nearly ten million (9.93) domestic trips took place in Wales out of a total of 122.91 million for the entirety of the UK (GBTS³¹, 2014). Given this positive scenario, New Quay was scrutinized to analyse the different types of trips which were chosen by dolphin watchers. Among different options described above, this field work revealed that the dominant type of visit for this sample was part of a trip in or close to New Quay (HT NQ). This was an overwhelming 71%, followed by those taking a holiday in another part of mid Wales (16%) as graph 6 illustrates. This result matched perfectly with the holiday habit of the main group: English people whose leisure time in this town is strongly influenced by school holidays, and as the family destination which it is, sleeping in caravan site or private accommodation in the area or in the mid Wales. Furthermore it is important to highlight that New Quay was not significant for dolphin watchers touring the region. Only 1% of tourism volume surveyed was travelling a holiday circuit. However, there

³¹ Great Britain Tourism Survey (GBTS), January to December 2013. Welsh Assembly Government, July 2014. Robert Lewis. Statistician.

could be a bias in the data, because tourists on long trips preferred not to fill the questionnaire due to the difficulty of remembering all of the expenditures and locations. To try to reduce this methodological limitation, some statistics were consulted: if the main lodging accommodation (self-serviced) is taken into account as a reference, its clientele showed a pattern of 24 % on a long holiday (more than 3 nights) and 69 % on short breaks, so the local accommodation is similarly dominated by single centre stays (Southend, 2011).

Moreover, the type of trip is significantly related to the method of travel. Consequently, dolphin watchers in New Quay confirmed another observation that the majority go to the area by car (89%). A good starting point to understand the reason because of the travel item generated the biggest local monetary leakage within tourism expenditures (see the travel section). A slight portion of tourist stated that they came by bicycle or walking (7%), a finding which could be explained with the recent opening of Coastal Path (2008). This setting is starting to become a leisure option according to some informal conversations with the local Tourism Centre staff, tourists on the pier and through the observation during the summer season. In addition, to complete the tourism scenario, the potential activities during the stay in New Quay, were consistent with the findings related to expenditure: meals and souvenirs are the most identified expenditures by respondents with 24% and 19% of the entire polled sample respectively (graph 7). At the same time, the likelihood to stay additional nights in the area as a result of dolphin watching was minimal (only 3 respondents of 219).



Graph 7: Potential activities to be performed by dolphin watchers. New Quay, summer, 2013

In regard to participating in the activities during the holidays, the study of Mehmetoglu (2007:210) was one of the few contributions to attempt to understand the relationship between tourists' trip activities and their spending behaviour. As starting point, he established a categorization related to travel activities of respondents. This classification comprises four categories:

- Visiting historic/cultural activities: visiting museums/galleries, appreciating architecture, visiting historic places and visiting cultural attractions.
- Relaxing nature-based activities: hiking, cycling, fishing, hunting and swimming.
- Pleasure-based activities: sunbathing, shopping, sightseeing and dining in restaurants/cafes.
- Challenging nature-based activities: diving/snorkelling, riding, climbing and going on a whale safari.

The main conclusion of Mehmetoglu (2007:213) was that those who chose nature-based activities such as diving and snorkelling are typically heavy spenders. Meanwhile those who prefer cultural activities such as visiting museums/galleries/attractions were more likely to be light spenders. In other words, these findings showed a positive tendency between the interest in nature-related activities and intention of payment: those more interested in nature based activities have a greater expenditure during the trip. Taking into account this classification and answers of the New Quay study, tourists are spending their holiday time on:

- Relaxing nature-based activities like swimming at local beaches or walking the Coastal Path in this area;
- Pleasure-based activities such as sunbathing at local beaches, sightseeing dolphins at the pier, or dining at local restaurants or cafes;
- And challenging nature-based activities represented in dolphin watching.

This first phase was designed to portray the dolphin watchers in New Quay, their profile, interests and type of trip, among other characteristics. The next step was to go into more detail, analysing decisions that they had to make related to their trip and, scrutinizing their consumption in the local business network. However, before approaching this layer of

tourism dynamic, based on some figures collected from the dolphin watching business, this study had to estimate how many visitors came to New Quay to enjoy a boat trip which involved watching dolphins in Cardigan Bay. This “exercise” will also allow calculation of the entire economic benefit of this industry in the region.

5.1.4 Dolphin watching activity

The base of this calculation was founded on the passenger numbers on the dolphin watching boats. Hence, the owners of dolphin watching business were consulted about the number of the passengers during the 2013 season, but because only two of the three of them gave the data, calculated estimates had to be made. This approximation has been made on the following key assumptions, some of which have been explained previously but at the same time they should be remembered: the dolphin watching season, in 2013, started at the beginning of April until the end of September, where,

- the peak season was considered to be from the last week of July to the last week of August, coinciding with the main school holidays. However, although the first week of September was still school holidays, because according to the observations New Quay was empty and the peak season started before the last week of July (first week of school holidays), the peak season was re-defined as 6 weeks instead of 5 weeks.
- the low season consisted of 17 weeks from Easter (1st April) to the third week of July, plus the four weeks of September. In total, 21 weeks.

These assumptions coincided with the statements revealed by the tourism business of Wales which took part in the report T&V-Ceredigion 2011-20 where the dolphin watching business participated actively: tourism season with the 100% of commerce opened from April to October; and the peak season in July with 100% of capacity and August with 91.3%. In the same manner, taking into account the participant observation and conversations with the owners of businesses³², the frequency of the boat trips was established thus: during the peak season, tours of 1.5 hour of length or less ran three times per day, meanwhile tour of 2 hours or more just ran twice. On the other hand, in low season, the trips were reduced by a

³² Although the number of trips per day was higher during the busy days, it is at the same time true that during the days with “bad weather conditions” their number decreased dramatically. Therefore, to aim to establish a golden rule which allowed calculating the total number dolphin watching trips for the whole season, it was decided to consider these conservative numbers which were given by the owners.

half, running two trips of 1.5 hour and only 1 boat for a two hour trip. These two last assumptions gave a total number of trips, 651, during the dolphin watching season of 2013. The next decision which had to be made was to determine the percentage of occupancy in each type of trip boat (table 12).

Table 12: Assumptions for the estimate of statistics for the dolphin watching. New Quay, season 2013

	Number of days	trips/day	Length of trip	Total of trips	% occupancy/season
<i>Peak season 6 weeks</i>	42	3 trips/day	1.5 h	210	100
		2 trips/day	> =2 h.		
<i>Low season 17 w.+ 4w.</i>	147	2 trips/day	1.5 h	441	50
		1 trips/day	> =2 h.		25
Total of trips/season=				651	58.33

These percentages were established based on participant observation both on the pier and on the boats by the researcher.

To complete this estimate, the maximum permitted capacity according to the license should be included in the calculation (table 13). Applying this information within the framework which was established by the given assumptions, the total number of passengers of boats during the season 2013 was

Table 13: Capacity of dolphin watchers per company. New Quay, season 2013

	Boat – length	Num. of pax ³³
RED	I red – 1.5 h.	67
	II red – 2 h.	53
BLUE	A blue – 1.5 h.	12
	B blue – 1h.	12
WHITE	1. white – 1.5 h.	12
	2. white 2h	12

approximately **33,334** people (table 14). This meant that the survey approached 2.4% of this volume (800 people). For more detail about this estimation see the appendix 7.

Table 14: Number of dolphin watchers estimated and real per company. New Quay, season 2013

	RED	BLUE	WHITE
Real figures	NA	█	█
Referred to	Two boats	1 boat	Two boats
Estimation	25,329	3,108	4,914
Total:	Estimated (R) ³⁴ = 33,334		Estimated= 33,351

³³ Pax: passengers.

³⁴ Estimated (R)= It is a estimated number of passengers based on the information provided by Blue and White businesses but adding the estimation carried out about the Red business which was worked out through the assumptions.

These above figures support the decisions made to define the tourism scenario because the difference between real and estimated figures are not significant. Therefore the assumptions based on observation are close enough to be considered adequate. At the same time, the data delivered by the Ceredigion County Council Tourism & Visitor Economy Strategy for Ceredigion 2011- 2020 published in 2011, could be taken as a reference to back up these assumptions. In that study the Cardigan Bay Marine Wildlife attracted an estimate of 20,000 tourists at that time. Therefore, an increase of nearly 4,500 visitors each year up to 2013 (three years) could be considered within the expected tourism development. With this new data, the next phase could be analysed under the entire economic benefit of this industry generated in a season. To achieve this goal, first of all, it is important to remember some characteristics about this industry in New Quay which have been described previously and the assumptions which had to be taken to make the extrapolation.

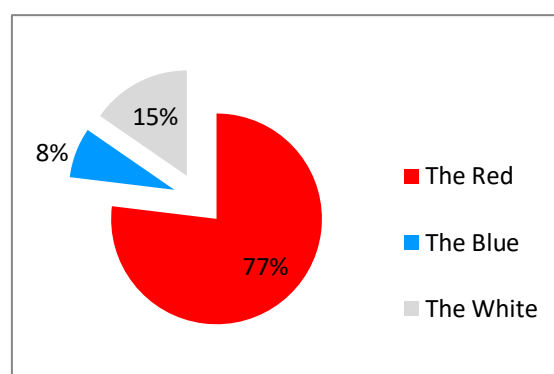
There were only three companies with similar services but different capacities on their boats and a slightly different pricing structure, as shown in table 15.

Table 15: Businesses of Dolphin watching activity. New Quay, season 2013

	Boat	No. of pax.	Length	Prices
RED	I red	67	1.5 h.	£8 adult/£ 4 child
	II red	53	2 h	£15 adult/£ 7.5 child
BLUE	A blue	12	1.5 h.	£ 15 adult/£ 10 child
WHITE	1.white	12	1.5 h.	£15 adult/£10 child
	2.white	12	2h	£18 adult/£10 child

In this analysis, a second boat of the Blue company was not considered because it was in operation from another port. Consequently, the capacity of this industry in New Quay was portrayed by a 77% of entire dolphin watching business capacity for the Red company as the graph 8 shows.

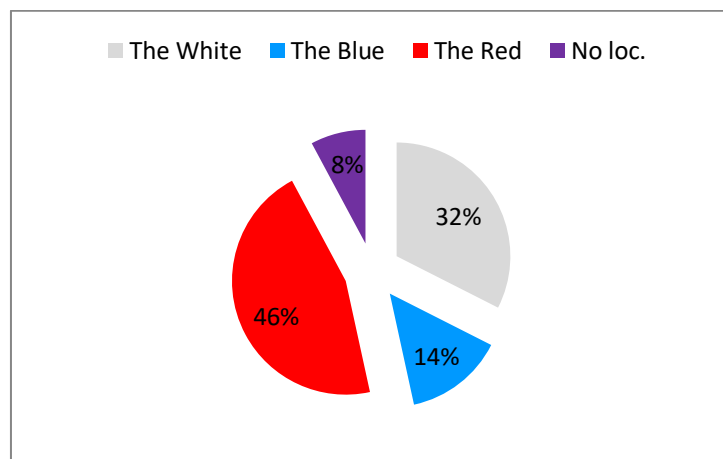
Another important element to consider is the “character” of each business related to the main “resource”: dolphins. Taking into account the participant observation on the boats and some findings from another project called “Mediating



Graph 8: Capacity of the dolphin watching companies. New Quay, summer, 2013

the Wildlife Tourism Experience”, where the interpretation given to tourists during the trips was analysed, these businesses could be classified in general thus: the Red company as the family offer; the Blue company as the family offer with a conservationist/educational message; and the White company as the offer focused on the conservationist/educational message. In this sense, it is important to highlight that no boat commentary was deliberately designed to be conservationist. However, these types of messages could be identified during the structured observation and interviews conducted in that project.

The survey reflected that this destination is still attracting non-specialist tourism, as the price is the priority in their choices. This statement was supported by the fact that the Red company, the cheapest, covered nearly half of the sample with 46% of dolphin watching tourists in New Quay (graph 9). Meanwhile the more conservationist offer and expensive, option White, handled 32% of visitors according to the expenditure on boat trip tickets of respondents.



Graph 9: Dolphin watching business taken by respondents (%). New Quay, summer, 2013

An element to consider was also the “no location” answers, purple on the graph 9, from dolphin watchers surveyed. This 8 % could be explained by a lack of distinction among brochures: all of them are blue, with dolphin pictures and the word “dolphin” on the front page. In other words, they have too many similarities in order to distinguish between them. This fact could be observed during the fieldwork where the confusion among tourists was very frequent, reflecting this confusion on the survey.

The expenditure on boat tickets alone was translated into £ 5,350 for the 219 parties in the sample. This group of parties was composed of 800 people; therefore the extrapolation gave as a result a direct expenditure around £ 222,924.5, broken down the in the following way:

Table 16: Estimated expenditure on Dolphin watching trips. New Quay, season 2013

<i>N. pax</i>		White	Blue	Red	No loc.	Total
800	<i>Survey (£)</i>	1737	755	2439	419	5350
1	<i>(£)</i>					6.6875
	<i>%</i>	32.5	14.1	45.6	7.8	100
33334	<i>Estimation (£)</i>	72377.5	31459.4	101628.6	17458.9	222,924.5

However this activity was scrutinized more in depth due to the participation on the boat trips and the work with the owners of these businesses during the whole project, which allowed another extrapolation, including more elements such as the capacity of boats, percentage of occupancy according to the time of the season and the number of the passengers given by some of companies. These elements which formed the simulation are displayed below

Table 17: Red company. Dolphin watching trips. New Quay, season 2013

	No. of weeks	No. of days	% occupancy	Boats	Capacity/boat	No. trips	No. pax/t trip	Boat	Total pax./boat	No. trips/type	(£)Price/trip
Peak season	6	42	100	I red	67	126	8442	I red	17353	420	8 adult 4 child
				II red	53	84	4452				
Low season	17	119	50	I red	33.5	238	7973	II red	7976.5	231	15 adult 7.5 child
				II red	26.5	119	3153				
	4	28	25	I red	16.75	56	938				
				II red	13.25	28	371				
		I red: 3 times/peak s. 2 times/ low season			Estimated total pax.=		25329		Total No. trips=	651	
		II red: 2 times/peak s. 1 time/ low season									

Table 18: Blue company. Dolphin watching trips. New Quay, season 2013

	No. of weeks	No. of days	% occupancy	Boats	Capacity/boat	No. trips	No. pax/t trip	Boat	Total pax./boat	No. trips/type	(£)Price/trip
Peak season	6	42	100	A blue	12	126	1512	A blue	3108	420	15 adult 10 child
Low season	17	119	50		6	238	1428				
	4	28	25		3	56	168				
		A blue: 3 times/peak s. 2 times/ low season			Estimated total pax.=		3108				
					Real total pax.=		█				

Table 19: White company. Dolphin watching trips. New Quay, season 2013

	No. of weeks	No. of days	% occupancy	Boats	Capacity/boat	No. trips	No. pax/t trip	Boat	Total pax./boat	No. trips/type	(£)Price/trip
Peak season	6	42	100	1.white	12	126	1512	1.white	3108	420	15 adult 10 child
				2.white	12	84	1008				
Low season	17	119	50	1.white	6	238	1428	2.white	1806	231	18 adult 10 child
				2.white	6	119	714				
	4	28	25	1.white	3	56	168				
				2.white	3	28	84				
		1.white : 3 times/peak s. 2 times/ low season			Estimated total pax.=		4914				
		II red: 2 times/peak s. 1 time/ low season			Real total pax.=		█				

Based on this framework, the gross benefit volume for this industry was calculated using the strategy of scenarios which in this case was designed according to the different type of party. In other words, the number of children in each party determined this range of options. This factor was chosen as the critical one to create these options because of two main facts: New Quay is a family destination, so the youngest of the family are important in making decisions about holidays; and because of the “apparently special” connection which children have with this animal, being in many times decisive for taking a boat trip. Therefore, the five scenarios (table 20) chosen according to the participant observation and chats with skippers and guides of the boats were:

**Table 20: Tourism Scenarios.
Dolphin watching. New Quay, season 2013**

<i>Parties</i>	<i>% Kid price</i>	<i>% Adult price</i>
<i>1 child+ 3 adults</i>	25	75
<i>1 child + 2 adults</i>	33.3	66.7
<i>2 child + 2 adults / 1 child + 1 adult</i>	50	50
<i>2 adults</i>	0	100
<i>2 child + 1 adult</i>	66.7	33.3

Taking the prices of trips into account, the tourism direct expenditure or gross economic benefit of this industry during the season 2013 inside of this framework could be the following as table 21 shows for the red boats:

**Table 21: Estimated benefit of Red company based on scenarios.
Dolphin watching. New Quay, season 2013.**

<i>Type of party</i>	<i>1 child+ 3 adults</i>	<i>1 child + 2 adults</i>	<i>2 child + 2 adults</i>	<i>2 adults</i>	<i>2 child + 1 adult</i>
<i>Total benefit (£)</i>	226,162.6	215,371.4	193,853.6	258,471.5	172,297.1

This business was the most popular for big families with children, so the third scenario could be the most real for the Red business. At the same time, the party formed by one adult with children was becoming more popular, as was previously mentioned, while the rest of the party was waiting on the pier. Maybe the reason was related to the party budget or to the lack of interest in dolphins by the adults of the group. Because the turnover from this dolphin watching company was not provided, the confirmation of the results of this extrapolation was not possible.

The Blue company was observed as a good boat trip for children and although its target group was mixed, the third scenario could be the most suitable for them (table 22).

**Table 22: Estimated benefit of Blue company based on scenarios.
Dolphin watching. New Quay, season 2013.**

<i>Type of party</i>	1 child+ 3 adults	1 child + 2 adults	2 child + 2 adults	2 adults	2 child + 1 adult
Total benefit (£)	42,735	41,435.9	38,850	46,620	36,256.4

The turnover of this company was delivered; therefore the testing could be conducted. According to the given assumptions the season was 27 weeks, if the data provided was £ [REDACTED] in a month the whole benefit was:

<i>Turnover (£)</i>	Period	No. weeks -Season	Estimation of Turnover (£)
5,500	1 month	27	37,125

Lastly, the White company which focused on “specialist tourist” could have obtained the following gross benefit during the 2013 season according to the scenario framework. From observation this was similar to the others; although its clients were from all parties, couples or group of adults without being concerned about the price were the most common type for this option³⁵.

**Table 23: Estimated benefit of White company based on scenarios.
Dolphin watching. New Quay, season 2013.**

<i>Type of party</i>	1 child+ 3 adults	1 child + 2 adults	2 child + 2 adults	2 adults	2 child + 1 adult
Total benefit (£)	71,631	69,125.1	64,134	79,128	59,130

The turnover of this business was £ [REDACTED] for the entire season according to its questionnaire of the second round, matching with the fourth scenario as has previously been commented on (table 23).

As an exercise, the observed combination, 2 child + 2 adults in Red and Blue company and a couple in the White, could give a gross benefit around £ 311,831.6. This process in more detail is displayed below, together with the table of benefits according to the described scenarios.

³⁵ Supported by the tourism record book of this business. Personal communication with the owner.

Table 24: Breakdown of the estimated benefit of Red company based on scenarios. Dolphin watching. New Quay, season 2013.

Boat	Total pax./boat	(£) Price/trip	1 child+ 3 adults		1 child + 2 adults		2 child + 2 adults		2 adults		2 child + 1 adult	
			75% adult 25% minor	£	66.7% adult 33.3% minor	£	50% adult 50% minor	£	100% adult 0% minor	£	33.3% adult 66.7% minor	£
<i>I red</i>	17353	8 adult	13014.8	104118	11567.5	92540.1	8676.5	69412		138824	5783.8	46270
		4 child	4338.3	17353	5783.8	23135.0	8676.5	34706		0	11567.5	46270
<i>II red</i>	7976.5	15 adult	5982.4	89735.6	5317.1	79757.0	3988.3	59823.8		119647.5	2658.6	39878.5
		7.5 child	1994.1	14955.9	2658.6	19939.3	3988.3	29911.9		0	5317.1	39878.5
			Total (£)=	226,162.6		215,371.4		193,853.6		258,471.5		172,297.1

Table 25: Breakdown of the estimated benefit of Blue company based on scenarios. Dolphin watching. New Quay, season 2013.

Boat	Total pax./boat	(£) Price/trip	1 child+ 3 adults		1 child + 2 adults		2 child + 2 adults		2 adults		2 child + 1 adult	
			75% adult 25% minor	£	66.7% adult 33.3% minor	£	50% adult 50% minor	£	100% adult 0% minor	£	33.3% adult 66.7% minor	£
<i>A blue</i>	3108	15 adult	2331	34965	2071.8	31076.9	1554	23310		46620	1035.9	15538.4
		10 child	777	7770	1035.9	10359	1554	15540		0	2071.8	20717.9
			Total (£)=	42,735		41,435.9		38,850		46,620		36,256.37

Table 26: Breakdown of the estimated benefit of White company based on scenarios. Dolphin watching. New Quay, season 2013.

Boat	Total pax./boat	(£) Price/trip	1 child+ 3 adults		1 child + 2 adults		2 child + 2 adults		2 adults		2 child + 1 adult	
			75% adult 25% minor	£	66.7% adult 33.3% minor	£	50% adult 50% minor	£	100% adult 0% minor	£	33.3% adult 66.7% minor	£
<i>1.white</i>	3108	15 adult	2331	34965	2071.8	31076.9	1554	23310		46620	1035.9	15538.4
		10 child	777	7770	1035.9	10359	1554	15540		0	2071.8	20717.9
<i>2.white</i>	1806	18 adult	1354.5	24381	1203.9	21669.8	903	16254		32508	601.9	10834.9
		10 child	451.5	4515	601.9	6019.4	903	9030		0	1203.9	12038.8
			Total (£)=	71,631		69,125.1		64,134		79,128		59,130.09

All of possible combined benefits among the scenarios of three companies are shown in the appendix 8

5.2 Dolphin watching expenditure and its economic multiplier effect

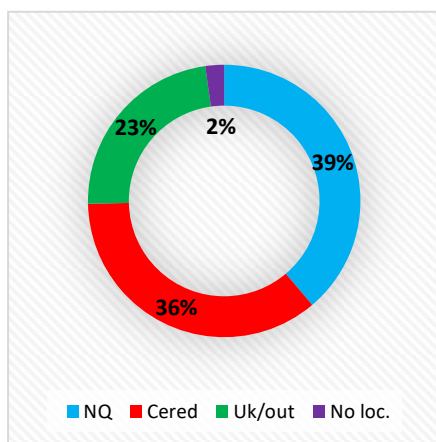
Once the tourism expenditure scenario for tourists, round 1, has been described and analysed; the potential direct impact of dolphin watching activity identified, the next step is to examine the expenditure patterns of dolphin watching tourists in New Quay: the layers of multiplier effect related to local business and their staff.

5.2.1 “How much and where do you spent your holiday budget?”

This question was broken down into the following items: accommodation, travel, food and drinks as the main components of the basic tourism structure.

Accommodation

This link of the whole tourism chain had to face a drop of 3% in the number of nights spent in Wales in 2013, the average being 3.39 nights per trip. The trend was general in the whole of the UK, making the trips shorter (GBTS, 2014). However, the snapshot carried out in New Quay through the data collected from 800 people polled, gathered by the 219 surveys, showed that many respondents were on the fourth day of their stay. This means that the



Graph 10: Dolphin watcher expenditure (%). Accommodation. New Quay, summer, 2013

dolphin watchers stayed in the area for a week on average, using the caravan site and private accommodation as the most popular options for lodging.

In general and in more detail, the findings were positive for the region as 75% of polled people mentioned that they were staying overnight in New Quay (39%) or within the county, Ceredigion (36%) as graph 10 describes. This could be understood because of the strong culture related to Caravan Parks on Welsh coast. In this sense, New Quay has wide offer related to this type of accommodation,

representing the highest percentage in this survey, 27% of all options. This figure was a consequence of the main type of holidays in the area: family holiday spot.

The wide cover that this accommodation enjoys in the region is contributing dramatically to the economic multiplier effect from the flow of tourism. In fact, the caravan site is considered the backbone of the entire tourism offer in New Quay. At the same time, the cottage option (private accommodation) is quickly developing as an alternative lodging. Nevertheless, it is important to point out that many answers related to rented houses involved confusion between “private accommodations” and “others”. In addition, for the purpose of this research it is relevant to highlight that the least popular accommodation option for dolphin watchers was hotels in New Quay.

The researcher observed that the B&B (Bed and Breakfast) option, although very popular in other destinations, is less popular in New Quay among tourists, probably because the main market, families, is less suitable for this type of accommodation. Besides, the lack of a proper public transport system does not help to develop this lodging. This accommodation picture followed the trend of the entire county with over 75% of the share dedicated to caravan and camping, with 64% of the whole stock located by the coastal belt. In fact less than 9% of bed stock is for options such as hotels, self-catering (e.g cottage) and serviced (e.g B&B), in a context with 853 establishments and 46,000 bed spaces recorded, according to The Tourism Company (2011)³⁶. The same sources showed that New Quay represents 12 % of the number of accommodation facilities and 18% of bed-spaces. At the same time, this area concentrates the major number of static pitches for caravan sites in the entire county (approximately 540). This situation with a clear imbalance among the type of accommodation and territories, is reproduced in New Quay as a general trend. This situation is in the same line as the suggestion of Mustika *et al.*, (2012) in relation to the lodge preferences of dolphin tourists in Lovina, who choose non-classified accommodation more frequently than a star-rated one.

³⁶ Source: 1988-89 Ceredigion Bedstock Survey, updated: 1995 & 2000. VisitWales grading list 27/10/10 in that document.

**Table 27: Expenditure in accommodation.
Dolphin watchers.
New Quay, season 2013**

	Survey	Estimated
<i>Pax.</i>	800	33,334
£	106,386	4,432,905

The polled sample yielded a monetary value of £106, 386 generated by 800 visitors staying in accommodation.

With regard to the potential economic impact of the dolphin activity in this sector, using the estimated numbers generated in the previous chapter, the

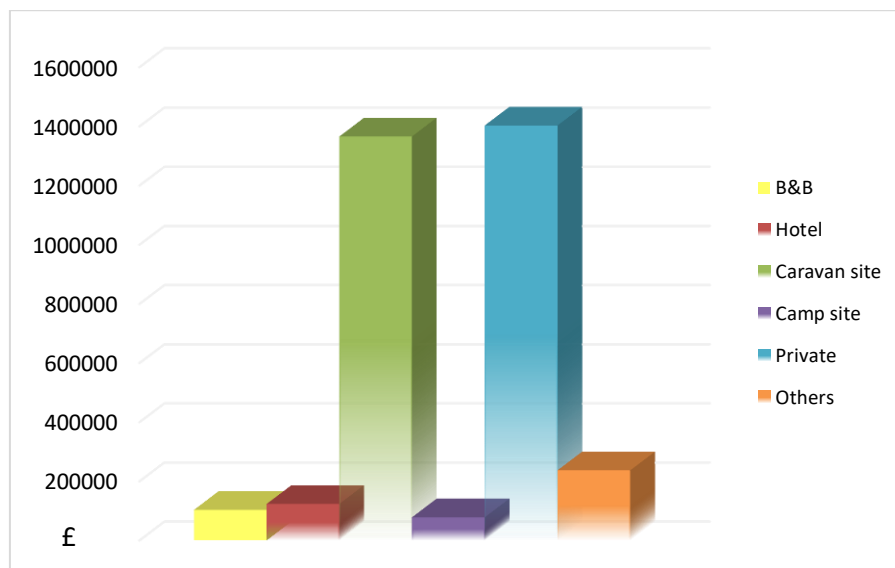
economic benefit could have reached nearly £ 4.5 million (table 27). This amount was the result of the extrapolation from data gained from the tourism survey with the estimation of the volume of the tourists which this marine wildlife activity attracted.

**Table 28: Expenditure estimated in accommodation.
Dolphin watchers. . New Quay, season 2013**

	New Quay	Ceredigion	UK /out	No loc.
%	38.8	35.8	23.1	2.2
£	1,721,060	1,588,889	1,024,411	98,545.12
	3,309,949			

Taking into account how this group distributed their expenditures, New Quay benefited by around £1,700,000 (and another £1.5 million spent inside the county), while the leakage from the region was over £ 1 million as table 28 describes.

In more detail in the following graph 11, caravan sites and private accommodation are shown to be the most popular option declared by polled dolphin watching tourists for their holiday lodging, contributing to the regional economy with £ 2,768,389 in New Quay and Ceredigion.



**Graph 11: Regional expenditure estimated in Accommodation (£).
Dolphin watchers. New Quay, season 2013**

Travel

Transportation is another key item to consider in this money flow. In this sense, the region still has to work on the accessibility by public transport. This method of travel was still only used by a minority of people to visit New Quay. Only 7 of 219 polled people used it during their holidays in the area. Therefore, the figures showed a clear dominance of private transport, with 79% of the whole expenditure for travel related to petrol and 10% associated with car hire. However, these benefits did not go to the community but were largely spent outside the region. The only economic profit from this item for New Quay was the payment in parking and 6% of total expenditure on petrol.

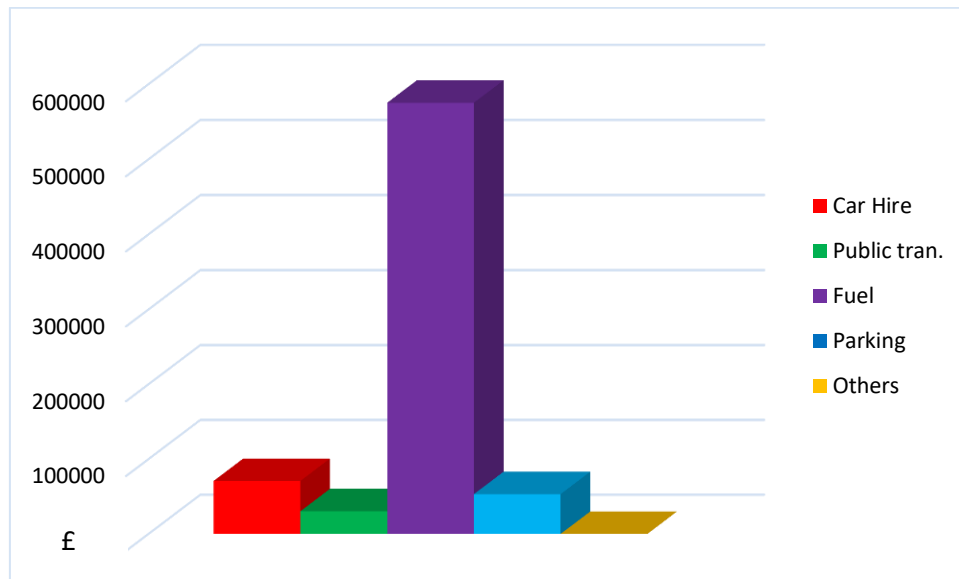
This scenario, described in the table 29, was translated into a spending of £ 17,513 by these tourists on transport but only £1,388.5

Table 29: Expenditure in Travel. Dolphin watchers. New Quay, summer 2013

	New Quay	Ceredigion	UK /out	No loc.	Total
<i>Survey (£)</i>	1,388.5	2,831	6,647.5	6,646	17,513
<i>%</i>	7.9	16.2	37.9	37.9	100

in New Quay, in petrol and parking mainly (with 58% and 42% of this amount respectively). Meanwhile, the expenditure made outside the region reached 38% of the total mobility budget.

Following the above mentioned extrapolation framework, this factor on any holiday trip could have generated an injection of money in the local economy of around £ 175,818.7 between expenditures made in New Quay and the whole county, Ceredigion. The breakdown would show that the major spending was on fuel following the general trend, secondly on parking and last one on public transport (see appendix 9 for more detail). Furthermore, the total amount estimated for the travel item would be approximately £ 729,733.9. Of which 79% was fuel (the main entry, graph 12), what would mean around £ 575,249.3, but only 25% spent in the wider region.



**Graph 12: Expenditure estimated in Travel (£). Dolphin watchers.
New Quay, season 2013**

In conclusion, the travel item inside the holiday expenditure was one of clear leakages of this money flow as clearly table 28 illustrates with 38% leakage outside the region. Therefore, and taking these figures into account, there should be an analysis whether it is worth attempting to turn this situation into a better public transport system in order to obtain more benefit from a socio-economic and environmental perspective. For further planning strategy, and considering the new leisure proposals in the area such as the Coastal Path, it would be convenient to improve this travel option in the region, in order to attract another type of market such as backpackers who are common users of B&B, an accommodation option which could be developed. In this sense, the recent operator survey carried out for the report T&V-Ceredigion 2011-20 showed that among the nine highest priorities to develop tourism in accordance with the industry should be included measures to facilitate the access to the countryside by public transport.

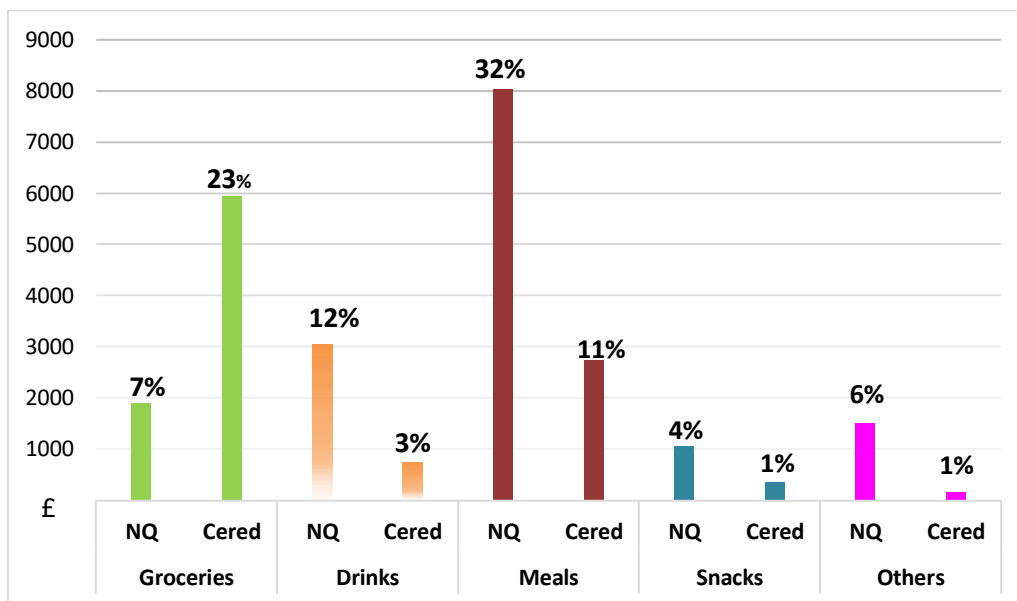
Food and drinks

Food and drinks are the other key link in the tourism supply chain. This piece of

Table 30: Expenditure in Food and Drinks. Dolphin watchers. New Quay, summer 2013

	New Quay	Ceredigion	UK /out	No loc.	Total
<i>Survey (£)</i>	15571.5	9934	6203	9934	41642.5
<i>%</i>	37.4	23.9	14.90	23.9	100

information is where the challenge concerning the memory and Welsh names was significant, therefore the connection between expenditure and places is weaker than other items (24% reported no location). Even so, the local economy receives a positive balance in these services as table 30 shows, with the whole expenditure being just 15% outside the region. Within this benefit of 37% consumed in New Quay, meals and drinks reached the expenditure in the town as is displayed in graph 13 (32% and 12% respectively). Likewise, “buying groceries” in Ceredigion reached a significant value, perhaps explained by the popular habit of consumers who are caravan customers: buying goods at cheaper prices in the big supermarkets of the region.



Graph 13: Regional expenditure in Food and drinks (£). Dolphin watchers. New Quay, summer 2013

In addition, the snacks item showed an important expenditure in this destination as well, £ 1,068.5 among the 800 polled people. This figure fitted with findings from participant observation during the field work, when the consumption habits of tourists were observed: enjoying oneself with an ice-cream or drink was the most popular behaviour after the boat trips.

With regard to the potential monetary flow from over 33, 000 visitors according to the estimate, this part of the tourism structure moved around £ 1,735,165 as table 31 discusses below:

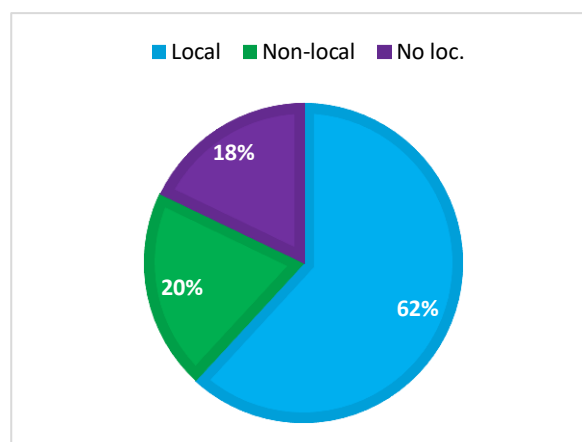
**Table 31: Expenditure estimated in Food and Drinks. Dolphin watchers.
New Quay, season 2013**

	Groceries	Drinks	Meals	Snacks	Others	Total
Survey (£)	14939.8	6406.5	15757.5	2667.5	1871.2	41,642.5
%	35.9	15.4	37.8	6.4	4.5	100
Estimation (£)	622,513.5	266,946.8	656,585.5	111,149.7	77,969.4	1,735,165

Locally, it is estimated that dolphin watching tourists spent £ 1,062,766 on food and drinks in the region, with £ 449,557.4 on meals and £ 327,232.3 on groceries. (See appendix 9 for more detail). A leakage from the area of £ 258,467.4 was extrapolated from the survey, especially in the groceries item with an expenditure of £ 135,650.6 in shops outside the region it was confirmed by the fact that the main group, English tourists, brought their own food from their home areas.

Other spending

The final entry was called the “other spending” section, attempting to understand if this tourism destination is generating extra income from other recreation activities and/or selling mainly souvenirs. Although in the questionnaire, the dolphin activity was included in this subdivision, this industry deserves another section as it is the core of this study. Therefore, this data was analysed without this key tourism attraction.



**Graph 14: Regional expenditure in "Other spending" (%). Dolphin watchers.
New Quay, summer 2013**

In conclusion, the survey confirmed (see graph 14) that the region was enjoying 62% of expenditure on this item, explained by the increasing tourism offer with activities such as Coastal Path, visiting a honey farm or following the Dylan Thomas Trail. At the same level of influence, the sale of souvenirs was shown as another main entry for this percentage. This situation reflected the mature stage which this family holiday destination found itself, where the network of facilities for the visitors is quite comprehensive, including gift shops. Therefore this supporting structure was gaining approximately £ 207, 500 with £ 128,325 going to the region according to the extrapolation as shown below (table 32):

**Table 32: Regional expenditure estimated in “other spending”.
Dolphin watchers. New Quay, season 2013**

	Other activities	Souvenirs	Others	Total
<i>Survey (£)</i>	1443.5	1474	162.2	3079.7
<i>%</i>	46.9	47.9	5.3	100
<i>Estimation (£)</i>	60,147.94	61,418.82	6,758.57	128,325.3

After this exploration, a “sketch” portrait could be made relating to this particular tourism segment in this marine wildlife destination:



English family consisting of middle-aged parents with two children:

They are employees with tertiary education, and whose interest in dolphins is high. They came to New Quay in their own private car to spend their holidays for approximately 7 days in a caravan site or private lodge in this town or close by.

Their expenditure approached £ 146 per week per person with the accommodation inclusive. They knew about the dolphin watching activity through leaflets and they expected to take a boat trip. At the same time, although they buy groceries at local shops, they enjoy nice meals and drinks at local bars and restaurants, buying some souvenirs in the area and maybe visiting the reptile museum or a honey farm.

However, if the purpose of the analysis is to understand the consumer behaviour of “real” dolphin watchers it is necessary to look back and treat the initial amount of money from tourists (round 1) with the percentage of interest in dolphins by tourists (question no. 1) as the key factor of this study. Although the target group of the study was dolphin watchers,

these tourists were not considered as "specialist tourists". Therefore, it became a relevant step to re-calculate this tourism economic input, based on the average of the importance of the presence of dolphins (66.7%), as a critical element for organizing the holidays during the season of 2013 in New Quay. In other words, from £ 65,918.2 spent in New Quay by the dolphin watchers, only £ 37,385.4 were considered the input consequent to the dolphin watching activity in the town as table 33 shows:

Table 33: Dolphin watcher expenditures (£). New Quay, summer 2013

Accomm.	Travel	F&D	Other sp.	TOTAL	Average % dolphins	INCOME
41,304	1,388.5	15,571.5	7,654.2	65,918.2	66.7	37,385.4

Or following the same line of argument, from £ 117,590.7 invested in products and services in the entire county, Ceredigion, £72,164.255 could be considered a direct benefit from the dolphin watching activity in New Quay (table 34).

Table 34: Dolphin watcher expenditures (£). Ceredigion, summer 2013

Accomm.	Travel	F&D	Other sp.	TOTAL	Average % dolphins	INCOME
79,436	4,219.5	25,505.5	8,429.7	117,590.7	66.7	72,164.3

Likewise, with regard to the potential total spending from this group of tourists during the summer of 2013, its economic impact was carried out inside a positive evolution context. According to the last GBTS (2013), Wales was the only British territory with an increase of 6.8 % in its tourism economic benefit compared with the previous year. This is translated into £ 1,696 million spent by overnight domestic tourists in Wales, 61% of this figure being related exclusively to leisure trips.

Focusing on the holiday dynamic in New Quay, the sum of different elements which configures any holiday trip gave as a result £ 4,9 million spent locally by these dolphin watchers (table 35). This monetary flow was generated in the region, New Quay and Ceredigion, whereas £ 2,2 million was leaked from the area.

Table 35: Regional expenditure estimated (£). Dolphin Watchers. Season 2013

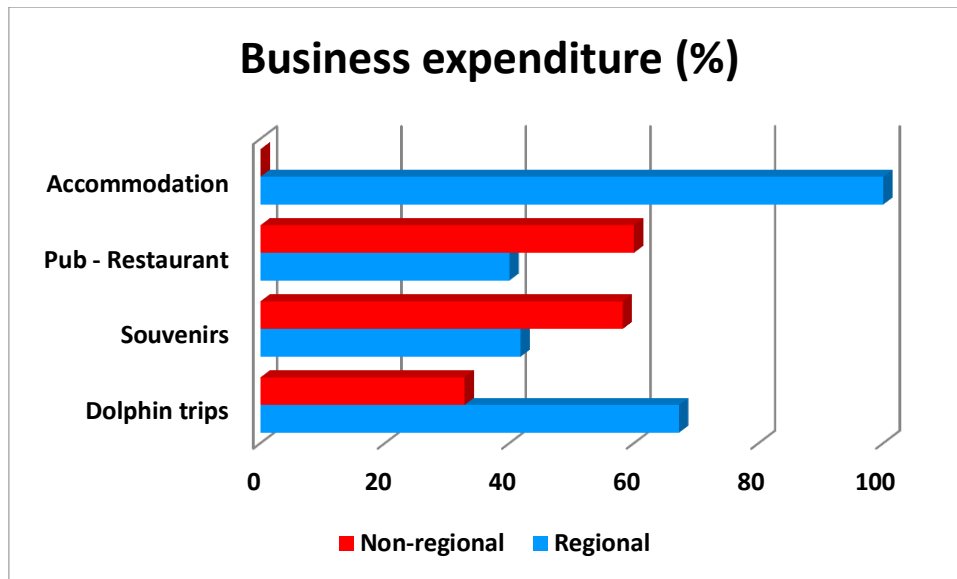
	Accomm.	Travel	F&D	Other sp.	Dolphin	TOTAL
<i>Total (inside and outside Ceredigion)</i>	4,432,905	729,733.9	1,735,165	207,536.4	222,924.5	7,105,340
<i>New Quay+ Ceredigion</i>	3,309,949	175,818.7	1,062,766	128,325.3	222,924.5	4,899,784
<i>66.7% specialist tourism in the region</i>	2,207,736	117,271	708,865.2	85,592.99	148,690.6	3,268,156

However, this study has concluded that only 66.7% of this expenditure is from dolphin watchers, therefore the benefit from this activity reached £3, 3 million in the entire county. Although, the dolphin watching activity was generating £ 223,000 in the county, taking into account that New Quay was attracting non-specialist tourists, for the purpose of this study, this amount of spending was re-calculated using this percentage, reducing this expenditure to £ 148,700.

As a summary, if the local expenditure is broken down, the accommodation was revealed as a key player (67.5%) and as was mentioned above, food and drinks were the second item where tourists spent their holiday budget (21.7%). Following this line of discussion, as table 34 highlights if the dolphin activity would be generating an economic direct impact of £ 148,690.6, this would involve 4.5% of whole expenditure. In this sense, taking into account that this study was designed to understand how this marine wildlife tourism industry was influenced in the economy of the region, it is pertinent to break down how this 4.5% of the entire flow of money was being generated.

5.2.2 Local business network and their purchases

The second step in this analysis of dolphin watching monetary flow was based on questionnaires related to 4 sectors: leisure, food and drinks, accommodation and souvenirs. As was explained above, the round of businesses did not have the expected support, therefore collecting data for calculating the multiplier effect was compromised. However, in the final analysis, these questionnaires have given enough information to break down the business expenditures of New Quay between local and non-local as is summarised in the following graph 15:



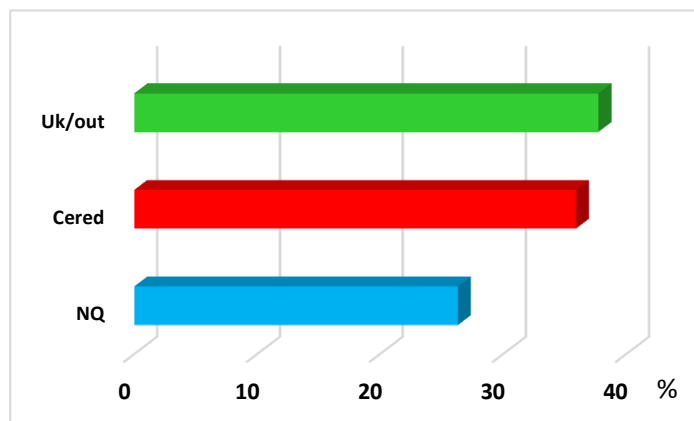
Graph 15: Business expenditure (%). Dolphin watching. New Quay, summer 2013

While the dolphin watching activity showed a support to the local economy with 60 % of their expenditures in New Quay and Ceredigion County, the tourism facilities and services such as restaurants or souvenir shops had a lesser economic impact in that region. The key exception to this picture was the accommodation, the cornerstone inside the tourism dynamic in New Quay, which had the majority of their expenditures locally in the county.

Another source of information concerning the economic performance of businesses in New Quay was informal conversation with some owners of key tourism establishments. The following examples can illustrate some current economic trends in the town. According to them the majority of restaurants in New Quay were being supplied by a large catering supplier of frozen food called Castell Howell Foods located in Carmarthenshire. However, it is important to highlight that there were clear exceptions who implemented a policy of local food in their business purchase. In the same manner, some of them worked with 80% of their suppliers from the area according to the personal communication with the owner. On the other hand, the support to the local economy could come from other items such as service of maintenance and repair, or staff from the area, which partly compensates the negative economic balance because they needed specific suppliers which were outside the region. This example symbolized the lack of offer by the suppliers to justify the economic leakage from the county. At the same time, other type of businesses, franchises for

example, were making their purchase decisions about goods based on financial reasons. The owners pointed out that if they bought their goods locally, they would be more expensive and tourists would not pay for them although the quality of local ingredients would be better being fresh. Therefore, these shops were not supporting the local economy as they would like.

In conclusion, this layer of the economic structure was contributing over 60% of their expenditures in the monetary flow in the area according to the survey (graph 16).



**Graph 16: Business Expenditure (%). Dolphin watching.
New Quay, summer 2013**

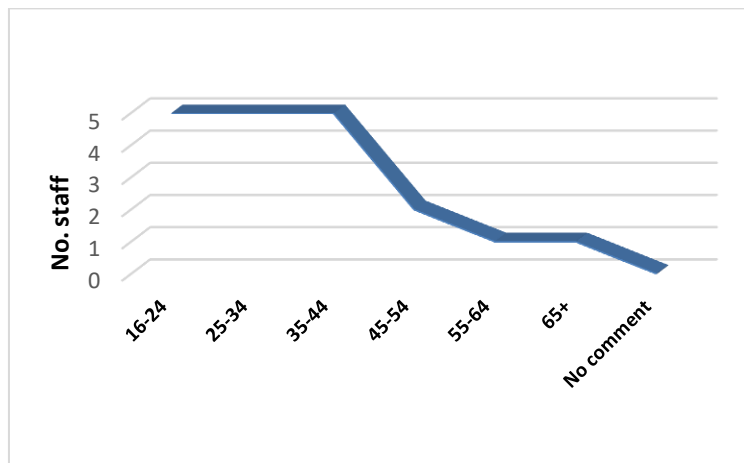
However, this significant percentage of purchase outside the county, around 38%, should be taken into account in the future development plans in this convergence area, in order to establish itself as a sustainable low carbon tourism destination.

5.2.3 Local work force and their consumption habits

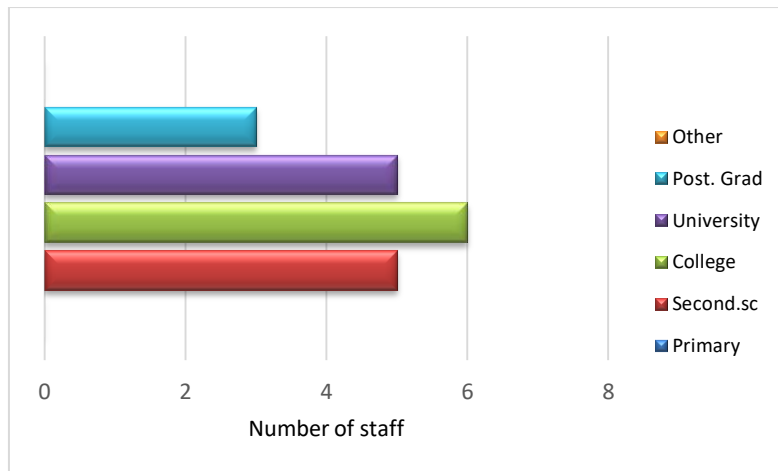
Nineteen questionnaires were the source of information for this part of the analysis. These surveys included the consumption habits of waiters, managers, skippers or receptionists among others. Before commencing with the breakdown, it is important to highlight that this target group was related to the businesses group during the fieldwork. Therefore because of the limits which emerged with companies, the access to their staff was restricted. That situation could generate some bias considering, for example, the fact that the majority of seasonal staff had already left the area when this round of the field work was implemented.

Tout and guide
Skipper
Crew/ Promoter
Manager
Worker
Bar Person
Waitress
Booking Office. Receptionist
Chef/ assistant
Sales Advisor
Administrator
Project Officer

The profile of workers in this tourism destination was described as having a significant difference between genders with 68% of females; inside an age range among 16 - 45 and with a slight dominance of more technical background or less academic as the following graphs 17 and 18 show:



Graph 17: Age of polled staff. Dolphin watching. New Quay, summer 2013



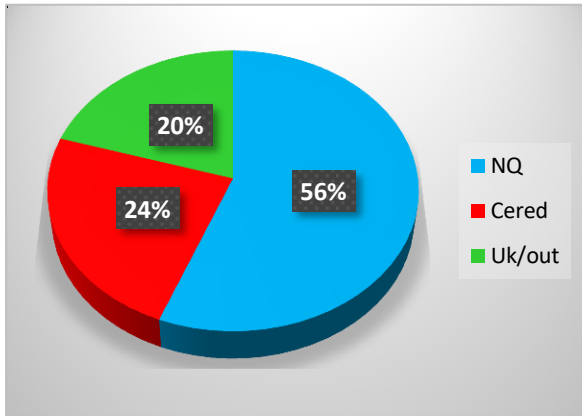
**Graph 18: Studies of polled staff. Dolphin watching.
New Quay, summer 2013**

The majority of staff were employees, 89%, with a nearly equal distribution among full time - part time and seasonal (7-5-7 respectively). In this sense, tourism in Wales usually hires two or less permanent staff and a similar proportion had two or less seasonal staff (60% or respondents according to the Appendix II. Operator survey)³⁷

With regard to the residency, within this polled group more than half lived in New Quay but nine out of nineteen resided outside the County for the remainder of the year. It is remarkable that these "external" origins are applicable in the highest positions polled, namely managers. This situation points to the fact that maybe this destination fills low and medium positions from the local work force but that staff from other regions are required for the jobs with more responsibilities. There was not enough information to confirm this very common labour situation in many holiday destinations, therefore an employment market study should be taken into account in order to contribute to the design of the future labour development strategies in the region.

The results concerning the everyday consumption of products and services among staff of local businesses did not reveal any surprises. Items like food, clothes or repairs were mainly bought locally but outside the town, in the big shopping centres of the county. On the other hand, going out, rent and council expenses were consumed in New Quay.

³⁷ T&V-Ceredigion 2011-20.



Graph 19: Staff expenditure. Dolphin watching. New Quay, summer 2013

In general terms, this last round invested their salaries in a local context, showing a 80 % of support to the regional production (graph 19). However, these figures tell a story of consumption in big supermarkets of the medium sized town of the county. Therefore, New Quay has another challenge to face: how to achieve affordable prices in order to boost the consumption of their local products. At

the same time, it is interesting to highlight that part of the purchases made in the UK or overseas (a leakage of 20 %), were related to online shopping, an option more and more popular in rural areas with limited services and offers.

Once the three layers of the consumption have been analysed, the next step will be the calculation of the economic impact: the multiplier effect, LM3.

5.2.4 The Multiplier Effect

‘The employment and income directly created by wildlife tourism results at the first stage from initial expenditure on wildlife tourism. In turn, when some of this income is spent by the recipients, this creates further income and employment. Economists say that a multiplier effect is present. Fillion *et al.* (1994) suggests that on average this multiplier for wildlife tourism is approximately 2’ (Higginbottom, 2004:155).

This study was focused on showing the economic multiplier effect in the local economy associated with everyday expenditure of dolphin watchers. This exploration was carried out in line with one of the main concerns stated by tourism industry³⁸: “making more use of local produce and suppliers”. This commitment was related to the sustainable development strategy of this economic activity and to its potential environmental impacts in the region. At the same time, this position was strengthened by this operator survey which also highlighted the general opinion that the coast in Ceredigion has significant potential to increase tourism. In this optimistic scenario, this particular case study, chose

³⁸ Tourism and Visitor Economy Strategy for Ceredigion 2011-2020. Appendix II Operator survey

the method called LM3 for this exploration. This methodology is based on spending habits of the three key layers of this local holiday structure: tourism, local businesses and their staff.

As a result, the marine wildlife tourism in New Quay during the tourism season of 2013, generated a multiplier effect of 1.5 locally in New Quay (table 37).

Table 37: Economic Multiplier Effect. Dolphin watching tourism. New Quay, summer 2013

	New Quay	Ceredigion ³⁹
LM3	1.5	2.2

This means that each £1 from dolphin watchers

reproduced another 0.5 p inside the entire local economic structure. The accommodation services, restaurants, supermarkets or souvenirs shops and the staff with their purchases were producing nearly half of a pound in the town.

Likewise, the multiplier effect in the region (Ceredigion County) reached around 2.2, which meant that the first pound of entry, was being doubled inside the county economy. This economic impact was calculated following the guidelines of LM3 method: once, the first tourism entry was identified, the portion of local and regional expenditures of the next rounds (business and staff) was implemented in the monetary flow cascade as is shown below (table 38):

Table 38: Breakdown of Economic Multiplier Effect from expenditure (£) from the respondents' survey. Dolphin watching tourism. New Quay, season 2013

Round 1		Round 2				Round 3	
	New Quay	Ceredigion	New Quay	Ceredigion		New Quay	Ceredigion
£	43967.4	78433					
		%	31.3	59.7			
		£	13758.8	46805.9	%	51	93.8
					£	7010	43883.9

And applying the formula of LM3 the results obtained were:

	New Quay	Ceredigion
Round 1 + 2 + 3 = Round 1	$\frac{43967.4+13758.8+7010}{43967.4}$	$\frac{78433+46805.9+43883.9}{78433}$
LM3	1.5	2.2

³⁹ Ceredigion understood as spending set made in the town of New Quay and the rest of the county.

These results are the product of the role of this industry in the entire tourism scenario in New Quay. Although, as was described before, this activity was in the rejuvenation stage within the entire tourism dynamic of the town, the obtained multiplier effects are not negligible taking into account the references which are considering a range between 1 and 3 but with a realistic limit of 2.2. Therefore, it could be argued that this new tourism path in New Quay is heading in the right direction, especially when the scenario is extended to whole county. The capacity to engender the money from dolphin watchers inside the regional economic network increases dramatically to more than double, 1.2. Hotels, petrol stations or shopping centres are some of facilities which are usually used by domestic tourism (main demand group), therefore this extra value could have been generated in this supporting structure.

Taking into account the key role of this provider structure, the multiplier effect by sectors was calculated. Accommodation, food and drinks, souvenirs were the chosen areas for this in detailed examination. The lodging services generated a multiplier effect locally of 1.2 in New Quay and 2.8 in the entire county. This significant difference between both ratios could be explained by the limited purchases in the town of the local business and their staff.

Table 39: Breakdown of Economic Multiplier Effect. Accommodation. New Quay, season 2013

		Round 1				
		New Quay	Ceredigion	Round 2		
£	27550	52982	New Quay	Ceredigion	Round 3	
		%	12.9	100		
		£	3548	52982	%	
					£	
					988	43911

Table 39 illustrates that the accommodation service used around 13 % of resources and services from New Quay. However, their entire daily purchases were made within the county. A similar habit was shown by their staff with only 28% of their expenditures in the commercial sector of this holiday destination. This scant expenditure in local establishments by this group of employees could be associated with the home area of the majority. It means that many of them were from outside New Quay but close to there, in Ceredigion, where they did their main shopping. And at the same time, New Quay inhabitants usually did the weekly grocery shopping in the big supermarkets away from the town according to numerous informal conversations with them.

Table 40: Economic Multiplier Effect. Food and Drinks. New Quay, summer, 2013.

	New Quay	Ceredigion
<i>LM3</i>	1.2	1.8

Another multiplier effect was related to the food and drinks services. In this case, the local ratio in New Quay was similar to the accommodation. On the contrary, the regional LM3 was lower than the one before, 1.8 as the table 40 displays.

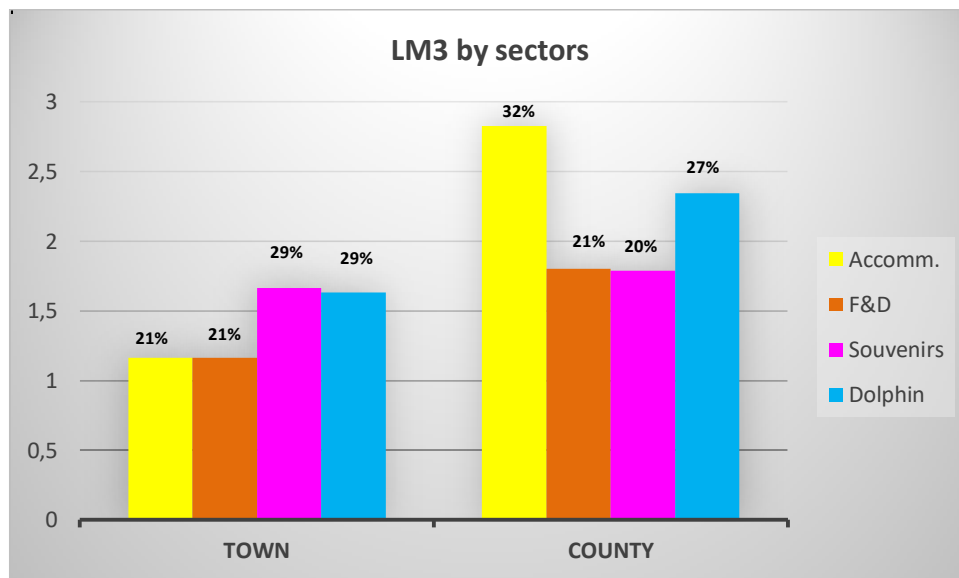
This ratio was obtained due to the fact that more than 50% was leaking out of the region, while 40% remained inside in the business's performance. The consumption habits of their staff followed a similar pattern to the previous group, spending their salaries locally.

The next analysed commercial sector was souvenirs shops a common expenditure within any holiday budget. Both in New Quay and in the entire county, these multiplier effects were more than one point: 1.7 and 1.8 respectively. This examination revealed another outside of region leakage of around 58%, in the business layer. According to the owners, it was necessary for them to purchase their products away from the UK in order to obtain competitive prices. With regard to the staff layer, there was no surprise regarding this, as they invested in the local business network.

The exploration of these three supporting areas highlighted the critical role which the business layer played in the calculation of LM3 (more detail about their calculations see appendix 10). Whereas the consumption habits of employees showed a similar pattern in all of the sectors, contributing to the local economy, the businesses were the ones that defined the value of ratio, according to their purchasing policy. In this sense, it could be stated that the accommodation, being the major daily expenditure related to services, provided a good local reinvestment as it involved the hiring of a local workforce as staff or maintenance services as examples. However, the food and drinks services and souvenir establishments (types of commerce with strong expenditure on consumer goods) represented the seepage within this local economic network. Therefore, as a conclusion it could be stated that Ceredigion was provided the proper workforce for this holiday destination but its capacity to supply the necessary goods for the entire tourism structure was still weak.

Furthermore, the dolphin watching industry was analysed separately as the core sector involved in the multiplier effect of this marine wildlife activity in New Quay. How the three tour operators behaved in terms of supporting the local economy was decisive to outlining the picture of the tourism economic impact in this destination. The first round was taken

To sum up, at a local level, in New Quay the sectors of souvenirs and dolphin watching activity each contributed significantly to the economic multiplier effect related to the entire dolphin watching offer (graph 20). The accommodation services and food and drinks sector had a lower input.



Graph 20: LM3 by sectors. Dolphin watching. New Quay, summer, 2013

Otherwise, when the economic impact was referred to the entire county, the accommodation sector acquired the key position in the tourism network with 32% of influence in the complete LM3. The dolphin watching activity had a significant impact in the regional economic structure. In other words, the presence of dolphins in Cardigan Bay contributed positively to the tourism offer of Ceredigion.

Chapter 6. Conclusion

The document explaining the Local Multiplier 3, *The Money Trail*, suggests that its main value is as an economic approach to calculate the monetary impact of an activity in accessible way. Its 'local' character allows users to implement this a priori "macroeconomic analysis" at ground level. These two main factors were those which attracted the author in order to probe them in the real context, in the current wildlife tourism scenario. As described during the methodological approach, this "bottom-up" strategy allows that the economic exploration focuses its analysis on the economic performance of real participants. Likewise, the result could create a precedent for further studies in this knowledge body and contribute to define more concisely any economic reality.

In this case, the 'verdict' could be described as reasonably positive. However, every 'excursion' into the real world requires making some adaptations and assuming some challenges. As a deductive project which it is, this methodology (Local Multiplier effect 3) was tested and its validation illustrated a number of aspects to contemplate. Therefore, in this summary of the entire project, the main elements that emerged during the course of the study are going to be reprised as main conclusions of this 'experiment'.

First of all, the methodology of the multiplier effect suggests that the starting amount is important for decoding the magnitude of this economic impact. Thence, based on the assumptions and applying the multiplier effect assessment, dolphin watching and associated tourism activity in New Quay generated £ 4, 9 million in the region (Ceredigion County) during the 2013 season. The total amount spent reached £7, 2 million, therefore the leakages was calculated at £ 2,2 million. These estimations were obtained from an expenditure of £3, 27 million by dolphin watchers during that year. In this manner, it is important to highlight that the direct contribution of users of dolphin watching trips was estimated around £ 4, 9 million but this was treated by 66.7% in order to capture only the economic impact stated by respondents to be initiated by dolphin watching.

One of the most significant direct consequences of this monetary flow is the creation of employment every season. As Higginbottom (2004) among others highlighted, the impact

on the employment in the local area by tourism activity is one of the key factors to consider in a tourism economic analysis. This crucial aspect is part of the tourism development and should be considered in any tourism multiplier effect assessment (Fletcher *et al.*, 2013). Considering the incipient stage in which marine wildlife tourism of New Quay finds itself, this destination can be a future source of labour for the entire surroundings. Tourism is an industry based on many services, therefore the impact in the employment sector (such as agriculture, construction, and hospitality) could be broad. In other words, this positive scenario would translate into more economic security for the community provided that the local business linkages are mature enough to perform as a cluster under the marine wildlife tourism destination. This economic perspective can occur only under a specific context which should be analysed in order to understand the conditions from which it is nourished.

First of all, every tourism development carries out some socioeconomic changes which should be contemplated in order to assess their impacts. The marine wildlife tourism is not an exception, therefore it needs to consider the environmental, socio-cultural and economic elements to become a reliable economic option for the local community, as Higginbottom (2004) suggested. In fact, this same author highlighted that when the tourism destination attracts mass tourism, the financial viability of tourism-related businesses becomes a crucial factor along with the impacts on host communities (positive or negative) which could be meaningful. The same main principle was defended by the theory of Prism of Sustainability (Valentin & Spangenberg, 2000), where 'the economy is usually perceived as a driving force behind most of the problems, but it could also be a force for the better, contributing to the solution of problems by creating enough wealth to solve them' (Spangenberg, 2004: 75). As a result of this tendency, nowadays, planning has to include the holistic analysis of impacts in order to design management and development strategies which are in concordance with the current demands from society, particularly economic diversification strategies and combating regional imbalances. At present, specifically in the tourism context, tour operators adhere to the alternative stream, such as ecotourism, when the financial scenario is favourable. Local businesses need short-term incomes in order not to choose less environmental friendly options as Cater (2007) indicates. In other words, is this strong bond benefiting the local community, becoming a truly locally-based proposal or is it actually another marketing tool? The key point to bear in mind is that the entire tourism

expenditure usually does not go into the host economy. Aiming to shed more light on this question, the economic impacts of this industry should be revealed in order to understand the complexity which is implied. In this sense, the LM3 analyses the behaviour of the local linkages within the economy when an external income flows through the structure. This is a methodology which does not demand high investment in terms of time, budget and access to large data bases such as input-output approach needs (historical data from at least 5 years). In addition, it works on a local scale therefore it does not have to be fed by regional, national or international data. Therefore, the balance between cost-benefit is suitable for this research tool implemented over one year on a local scale.

This study revealed the interconnection among key elements such as land uses, economic benefits in the host community, low carbon supply chain, and market focus. The research study highlights the type of business management that emerged as the reason for the consumption behaviour pattern and the spatial distribution of these purchases. As was explained during the theoretical review, the ownership of the firms establishes the size and location of the key businesses of any economic network, and the potential for benefit for the entire territory, avoiding enclave tourism (Lacher, *et al*, 2010). Therefore, the main aim was to show the intrinsic relationship between the territories with the tourism finances in one of the European convergence area of Mid Wales. At the same time, the methodology, LM3, was tested in this particular leisure scenario. The main conclusion was that it is a good socioeconomic tool to create a “snapshot” of the economic impact in a specific tourism initiative. However, due to the complexity of the tourism field, especially cetacean wildlife watching, another important outcome was revealed: before implementing this economic assessment tool, an exploratory case study is needed to be undertaken in order to know the local socio- economic conditions.

This case study attempted to analyse the three social segments with which LM3 works: tourism; local business network; and local work force. In this sense, ‘The Money Trail’ (Sacks, 2002: 95) suggests:

LM3 gives you a numerical grasp of local money flows, but you may end up wondering 'Are people doing better because of the way the local economy is working?' These are qualitative questions that require a different approach. We recommend a range of social, economic and environmental indicators to really understand your local community, as well as intense discussion in pubs and supermarket aisles, church halls and market stalls.

Therefore, an ethnographic approach was chosen to add to this examination, but it was not enough to create the base line to understand properly all of the socioeconomic stratus which LM3 analysis implies. 'In this sense, Sacks (2002) suggests that some key elements should be reflected such as the type of community or organisation which is interested in this economic analysis; reasons for making the analysis; and the all dimensions of the potential impacts of this economic exploration. In other words, the basic step for drawing the proper framework for communal financial projects is to deliberate on what wants to be discovered related to a monetary flow within the community (why, to whom it affects and how). To begin in this process, the exploration of the research context is crucial in order to be able to answer these guiding questions. This particular scenario was characterized by the pioneer stage in which the dolphin watching activity in New Quay was operating. This holiday destination, and Cardigan Bay in general, has significant marine tourism conditions for developing a successful dolphin watching industry. However, these resources are currently underutilised in accordance with the early stage in which this particular niche tourism segment is located. This phase was identified by the following indicators:

- This dolphin watching hot-spot does not enjoy broad popularity in the entire UK yet.
- The activity is operated by non- high skilled staff such as qualified guides.
- There is a lack of the local mature business network or entrepreneurs to supply the tourism demands.

All these factors situate the current tourism dynamic of New Quay in the rejuvenation stage of the Tourism Area Life Cycle (TALC) of Butler (1980): a consolidated traditional family destination which takes a new direction to become a specialist holiday destination, leveraging marine wildlife tourism. In other words, dolphin watching option in New Quay is covered under the framework of mass tourism. Consequently, the specialization as a marine wildlife tourism hotspot and hence, the professionalization of this ecotourism sector is still in its early stages.

At the same time, the study of the research context highlighted another key factor: the low legitimacy of academia within this community. This is not uncommon in industry-academic research projects, as recently discussed by Low & Everett (2015). In our case the University has to fulfil a social function in the place where it is located. Academia must establish bonds of cooperation with the society in the long term where the needs and particularities of the community should be taken into account. In that way, projects such as this one would be implemented, with a more active participation of the community due to the fact that the University would already be a legitimate actor in the area. In this sense, the LM3 methodology demanded a cooperative working environment. Therefore, during the fieldwork of this project, the lack of connection between University and community was evident from the early stages. As a consequence, this lack of relationship generated issues such as the low reliability of the anonymity during the study process. For that reason, these constraints should be resolved before commencing the project in order to prevent the quality of the study being affected. In this manner, a basic step usually implemented is to reach a beneficial agreement for both parts (University and community) during the design stage. For this reason, the communication of the project is a necessary strategy to spread the objectives of the study to inform the stakeholders and local population. At the same time, it contributes to the continual updating of the entire process. To sum up, one of the main lessons learnt in this research study was that the University needs to be more closely connected to this community to turn into a legitimate interlocutor. This relationship, based on confidence between both parts, requires time and constant and continuous work with the communities on the part of the University. Studies such as this one contribute to approaching this ideal scenario. However more steps are necessary for implementing projects with this grade of commitment such as economic impact assessment.

In this line of thought, the strengthening of this pairing, 'academia - local population', could develop through a business training program provided by this University. This education proposal is based on the two gaps identified by the study and mentioned above: the incipient organizational structure of the current tourism industry in New Quay and the lack of formal training in business strategies within the local entrepreneurship. As was analysed previously, rural and peripheral areas in particular have to deal with some limitations related to scarcity of skilled staff (Fuller *et al.* 2005) or suitable experience in business

matters by many microbusiness owners (Holder 1989; Tosun 2000; Nyaupane *et al.* 2006; Holder 1989; Torres 2003). Therefore, one of recommendations of study is that through the Centre for Local and Regional Enterprise (CLaRE⁴⁰) of Aberystwyth University, this disadvantageous situation can be converted into an opportunity to establish this working cooperation. It is a research platform whose main purpose is to facilitate the enterprise development in the area. In this sense, this study is framed within this philosophy, being the first step towards the next level, the professionalization: showing the importance of the economic development in the region for the sustainability of this tourism activity.

At the same time, another key factor should be considered by this education-research strategy: the suitable business strategy for each stage of an economic activity. This collaboration could contribute to its update. In this regard, during the 2013 season, their enterprise strategies still followed a competitive, ignoring the fact that cooperation is crucial in order to consolidate a new option in a traditional framework as happens in the New Quay tourism case and hence, for setting an operational cluster (Porter, 1998). In this respect, a concept which went beyond so-called “coopetition”, which was developed by Ritchie & Crouch (2003), could be considered as a way that the entire supporting network such as attractions, hotels or restaurants work as a cluster, attracting together a specific group of market. This strategy of working together is especially decisive in complex sectors such as the marine based wildlife watching (Higginbottom, 2004). This spectrum of business theories such as competition vs. cooperation, customer focus and the current knowledge-based focus, are concepts which have been dealt with the wildlife tourism context for decades (Porter 1998; Lampel & Mintzberg, 1996; Drucker, *et al.* 1997; and Leiper, 1995). In this vein, Porter in 1980 already classified the business behaviour in three categories which could be used to describe the dolphin watching business during the 2013 season. In the New Quay mass tourism context, the tour operator with the major market share followed the “cost leadership” strategy: maximising the economic benefit through the lowest price (as is usually made in economies of scale). On the other hand, the “differentiation and focus strategy” was represented by the two others, which were looking for a distinction among tourists as marine wildlife tour operators: using strategies such as including biologists as

⁴⁰ <http://www.aber.ac.uk/en/smb/research/local-regional-enterprise/>

guides or working together with the conservation organizations. This preference is in concordance with the description previously mentioned by Higginbottom (2004) about this type of tourist which is interested in interpretation; education and rare species. In this manner, these businesses were depending on tourism becoming more specialized. However, unfortunately, this latter approach still required an investment in market studies for checking its effectiveness, and at the same time, a high demand on time for reaching this target group. On this subject, this study attempted to fill part of this gap in the knowledge, involving these two businesses in this study from the beginning as part of their knowledge-based focus tactic. As a result, nowadays, they are more aware of the dynamics of this industry. This type of business decision comes under 'the competing for tourists' custom via intensive business strategies targeting distinctive attributes of tourists" of the Leiper model (2003), where the process of "industrialization" in the tourism sector was exposed. To wit, creating a strong structure based on the links among trade people, suppliers or providers of services as in every industry.

This pro-active posture would show the journey which the marine wildlife tourism of New Quay should follow for reaching a specialized market. In contrast, the current attitude of the New Quay Dolphin Watching cluster could be classified as "passively accepting tourists as customers, but no business strategy targeting distinctive attributes of tourists" according to Leiper's model (Leiper cited in Higginbottom 2004: 192). This description about the current business strategy is result of the ethnographic approach of this study. However, these changes in the management strategy of businesses are not free of certain difficulties when these standard theories are implemented in the particular milieus as Lampel & Mintzberg already pointed out in 1996. For that reason, in situations such as those of New Quay, where the majority of managers are the owners of micro or familiar businesses there is a need of expert counselling for crossing this transition.

In addition, following the analysis of the research context, the marine wildlife tourism destination proved to be a real challenge for the carrying out of the fieldwork of economic impact studies. Marine wildlife tourism has intrinsic conditions which can become a challenge for researcher and managers. The scenario where the activity is operating symbolises the complexity of the border between the two macro ecosystems: the land and the sea, with the base camp on the coast and daily "forays" to the ocean on boats or

underwater. The scenario can be described as crowded piers full of nervous tourists who are looking for the boarding point. Also they can be excited because of the trip but at the same time, with a certain feeling of vulnerability due to the unknown character that oceans still represent for the general public. Once aboard, noisy boats, full of curious faces which are staring at the water seeking a fin which emerges or simply relaxed looking at the blue horizon. This is the typical backdrop found by the research study during the fieldwork of this project. Ergo, how to handle these different environments with an acceptable result for the purpose of the projects, emerged as a pending learning process. In this sense, the field work of this study showed some reflections in order to improve the data collection data of this bottom-up research approach.

First of all, the informal holiday context clashes with the classical methodology used in other contexts. Surveys or questionnaires related to sensitive information such as finances break dramatically the adventure character which marine cetacean watching endeavours to create. As a result, the refusal to take part in this type of surveys reached a high rate. The tourism context is not an appropriate one to ponder on expenditures or money in this formal manner. In consequence, the methodology can become the one of main constraints for the project and be responsible of the segregation of the target group. This situation happens when the projects experience a clash between the demanded objectivity in any research study and the social reality observable in this type of the contexts as it was described in the methodology of this study. A clear example of this potential conflict is the effect of questionnaires in the all target groups, but especially to tourists since they reminded them of bureaucratic paperwork. As a result, this study experienced this lack of empathy with the project which affected the rate of participation in it. It generated an inherent methodological bias that should be taken into account. This methodological limitation gave the opportunity to reflect on the relevance of this type of data collection tool in leisure contexts. This debate was fuelled due to some issues which emerged during the research process of this study. To start, the control of data during the survey time was a difficult issue to remedy. The challenge resided in designing a research tool related to personal finances with two key characteristics: being implemented in the presence of the researcher and at the same time, doing it without making tourists feel "uncomfortable" because of the fact of discussing money in the presence of strangers (researcher). On the

other hand, independent questionnaires were rejected from the beginning of the tourism round because of a lack of control by the researcher, and the necessity to aid the polled person during the completion of the questionnaire. In addition, other relevant constraints which were related to the memory and extra difficulty with the Welsh names, could generate a bias. Due to the rigidity of the research tool (questionnaire) the study had problems involving some segments of the tourist target for similar reasons: elderly people, youth and international tourist groups. The first and third one because of their difficulty to remember data and place. Regarding the overseas group, although it was still limited, it is important to consider it for the next stage in the path towards the maturity of this marine wildlife destination. Furthermore, the youth frequently showed lack of interest in taking part in surveys during their days off.

These situations with the classical research tools are more and more common. The current society enjoys the spare time under multiple - stimulus atmospheres; with more active leisure strategies; and participative and visual tools of communication. These conditions create a more informal scenario than previously, therefore studies where the questionnaires are the form to approach the general public are supported by less and less followers. Consequently, another main lesson learnt in this research study is that academia is still behind in these new circumstances. Upgrading and testing other methods more suitable for a "less serious society" is still an unfinished business for Universities. A strategy focused on gaming such as quizzes or competitions could remove the feeling that the required information is too personal to share. If the request is converted into a game, the individual character of the survey could be disguised. This project could not implement this methodological innovation for collecting data due to its specific objectives and timing requirements of the study. However, the study was redirected on several occasions and this discussion related to the relevance of questionnaires was ongoing during the entire research project.

Another issue with which the data collection process had to deal was the social constructions of some topics. The intrinsic characteristic of any society should be considered during the process of the research tool design. This study has demonstrated that this social effect can generate bias affecting the entire analysis of the economic multiplier impact. The

particular methodology, LM3, expected that 'asking people where they spent their money got them thinking of local economy issues' (Sacks, 2002: 63). This premise was fulfilled among people polled trying to show only their local expenditures, satisfying in this manner their necessity to be good citizens. As a result, the study has had to face an issue of data quality. Likewise, a factor rooted in Western society emerged as other bias to reach the objective of the project: strong sympathy for dolphins by the general public. Finding somebody without any attraction by this charismatic animal was highly unlikely, therefore the selection of the target group was influenced by this "compulsory love for dolphins", being difficult to define who was a specialist tourist and who was not. Despite all of these constraints, the questionnaire was chosen as the main research tool for this study as the LM3 theory promotes. The handbook of this method states that the use of surveys is suitable for gaining the accurate results, arguing that this first-hand research technique allows access to the primary information sources. For that reason the questionnaire was chosen as the main research tool for this study. Likewise, the theory supports the completion of this exploration with interviews and informal conversations with the target group in order to obtain the best information possible. In this sense, this local multiplier effect method mentions that it is not essential to obtain a high number of surveys for the application of the LM3. However, this study identified the difficulty of carrying out this type of economic impact analysis without a proper quantity of surveys: the credibility of the results can be affected. This project had to face a significant gap of data related to the business layer. Consequently, some assumptions were implemented in order to pursue the economic analysis. This situation generated results which have been higher than that expected, according to the other studies, which located the ratio of the multiplier effect of wildlife tourism sites at around 2 at most (Filion *et al.*, 1994). The LM3 ratios of this project have been estimated with 1.5 for New Quay and 2.2 for Ceredigion (county). These figures do not match with the initial stage of the tourism life cycle which was identified by some indicators during the ethnographic approach. Moreover, through informal conversations with owners of businesses as part of the ethnographic approach, they confirmed that many of their products are acquired outside the region, even overseas mainly because of competitive prices issue. Therefore, the results should have made more visible this leakage in the second round. Nevertheless, the relation between the key suppliers sectors have followed the pattern identified during the stay in the research scenario:

- strong influence by the accommodation in the entire county which defines the type of holidays in the region (caravan sites).
- constant role of the dolphin watching industry inside both the local economies (town and county).
- unimportance of the souvenir sector in the local context related to the dolphin watching , shown to be a guaranteed purchase when tourists visit New Quay independently of the purpose of their trip. And a similar role of the food and drinks services in both contexts due to the fact that dolphin watching activity is supported by the traditional structure of mass tourism which is well established in the region.

To sum up, the conclusion that emerged from the particular fieldwork of the study is that it is necessary to use surveys for implementing this method but avoiding the classic approach. The challenge must be to examine complementary alternatives to the traditional questionnaire to make it more attractive and accessible to the target audience in the marine wildlife tourism context.

Similarly, another strategic aspect to note is the complex network of actors which usually is involved in any tourism activity. In these type of studies characterized by the inclusion of several scopes (such as economy, tourism, conservation and sociology), it is vital to recognise the main stakeholders in each body of knowledge. In this manner, their goals and potential common points can be identified in order to create a strong network around the initiatives of development such as the dolphin watching activity. In this particular case, the key stakeholders of this convergence area, such as local planning authorities, tourism businesses and tourism organizations should be classified as potential beneficiaries of findings of this study. As Sacks (2002:8) points out 'measuring local money flows reminds everyone in your community – businesses, government, and of course local residents – that how they spend their money can make a difference'.

On the local-regional scale, the Governmental body responsible for supporting tourism, the Ceredigion County Council, - as the regional authority of territorial planning and industrial strategy, – can incorporate some socio- economic clues given by the LM3 in their tourism plans, which are more and more connected with the economic challenges of the county. In the conservation sector, Cardigan Bay Marine Wildlife Centre symbolizes the local NGO

interested in the health of the entire ecosystem and its adequate use by the society. Consequently, the way the tourism, based on the marine resource considers the economic benefit for the community, is consistent with their goals related to the sustainable use of the ecosystems. In the same manner, research institutions are becoming one of the natural partners in the community projects. In this sense, Aberystwyth University is developing as a key player in the region, promoting studies such as this one where the core of the research is to understand how the local economy can be affected by the tourism offer. On the national scale, the tourism ministry in the Welsh government is the entity responsible for the establishment of a framework for the sector and its regulation in the country. Therefore it needs to understand the monetary flow of an activity such as the dolphin watching, its links and leakages for updating these national guidelines. Furthermore, Sea Watch Foundation, as the representative in New Quay of the national conservation movement, can use the extrapolation of the local findings of this project which puts an economic value on a charismatic species such as the dolphin. Lastly, on the European-global scale, the list of organizations with some links with this marine wildlife activity can be endless. However among them, the European Union should be considered as a guarantor of the development of convergence areas such as Wales; Dolphin Fund⁴¹ because of its work with cetaceans in Europe; IFAW⁴² or IUCN⁴³ as a world conservationist organizations which have written reports regarding this sector; or World Tourism Organization⁴⁴ because of its role in tourism at an international level. In conclusion, the more numerous the number of stakeholders involved in an activity, the more sustainable will be this activity in the territory and in the society. In other words, the performance of the industry is inevitably connected with the benefits in the society and its environment directly or indirectly (Cater & Cater 2007) as the theoretical pathway of this study has tried to reveal.

Once the map of stakeholders has been drawn, the next step is to reveal in more detail the utility of this study. The policy makers are the first target audience of these type of projects. The information generated through the analysis of data gives them a more realistic context for the design of their development plans in the region. In fact, as a long term strategy, this

⁴¹ Whale and Dolphin watching in Europe: <http://www.dolphinfund.eu/en/whalewatching/index.htm>

⁴² International Fund for Animal Welfare: <http://www.ifaw.org/european-union>

⁴³ International Union for Conservation of Nature: <http://iucn.org/>

⁴⁴ World Tourism Organization: <http://www2.unwto.org/>

information could be useful for the structuring of key sectors in the region to offer more attractive and reliable tourism options: such as a network of communication and transport or the food supplier grid. Hence, this study has demonstrated that this research study can provide useful information related to the entire tourism scenario in a specific short time (one year). In addition, because of its interdisciplinary approach, the data provided has allowed the creation of the tourism profile and its connection with the interest in a tourism resource (dolphins) as Filla *et al.* (2012) suggested for ecotourism offers.

All this information (visitor preferences; business purchase performance and local consumption habits) should be part of the knowledge pool regarding the region which contributes to planning and managing the tourism development in a sustainable manner. The success of these public interventions will impact on the tourism activity directly or indirectly (Petrocchi, 2001 cited in Filla, *et al.* 2012). Therefore, the ramifications of this economic activity should be included in the process of making political decisions, for the creation of an appropriate economic, social and regulatory environment that encourages enterprise and new business development. In this sense, any territory strongly delineated by its natural resources, requires attention on how the local economy is intertwined with territory and socio-cultural and historical processes. In this way, the evaluation of the low carbon characteristic of the tourism offer through the supply-chain is an unavoidable step. The comprehensive understanding of the marine tourism supply chain and its impact on convergence communities can assist in the enhancement and promotion of a sustainable low carbon tourism economy in West Wales. By examining both the supply and demand side of this equation, studies such as this one can contribute towards best practice in spatial planning to ensure the most sustainable local economic outcomes. On this subject, this project has provided the identification of the links and leakages which affected the monetary flow of dolphin watching in New Quay. These included the current weakness of public travel methods for tourists and local food suppliers for business; and strengths in the multiplier for accommodation offer and food and drinks services for tourism. Subsequently, the measures for the strengthening of these trade connections and the strategies for filling the economic gaps could be established by the governmental and non-governmental institutions as Budowski (1976 cited in Higginbottom, 2004: 10) already mentioned:

‘Governments and major international conservation organisations now widely support the view that well-managed nature-based tourism is one form of land use that can meet these joint goals’.

This statement has more meaning in the areas called EU “convergence regions”. In these territories, tourism is often one of the most important economic sectors. Therefore, the sustainable development under the guidelines of the low carbon economy must not be underestimated. However, because of the procedural decisions made (making simpler the requirement of the link between expenditure-territory), when everything is considered, this project cannot determine if this offer meets the requirements to be classified as a low carbon economic initiative. The data collected was not enough for conducting this type of analysis, although one of the proven key leakages can provide relevant clues for it: the transportation network for tourists; which accounted for 38% of purchase outside the county by the local businesses. Ergo, the next question to answer is if it is pertinent to consider this proposal as a low carbon economy initiative and its classification inside the range between soft – hard ecotourism (Weaver, 2005) because of its grade of the commitment to the environment. This is a relevant research question for further studies. However, the liability of the local or national authorities in this urgent challenge is another key factor which must be addressed. One of the most popular plans related to this lack of structuring is to develop supra facilities which facilitate the generation of a truly low carbon offer. Nevertheless, these types of theoretical schemes often conflict with the reality of these rural environments: a scarce local population; geography appropriated for the isolation; and / or designated land to other uses (such as agriculture or resources conservation) which are not compatible for developing a broad communication network. Wales is a good example of this, even though some interventions have been made in this manner such as the Coastal Path. This is a good step towards the diversification of activities in the region, establishing a non-motorised traffic form of enjoying nature. In addition, these new leisure options can always contribute to minimise the impact on the dolphin population indirectly if the tourism demand increases.

Regarding this line of argument of the role of the public authorities, another angle must be considered: to be the guarantor of common good. The government plays the most decisive role in driving this “commercial use” of nature for conservation purposes, a common role in

developing countries but still controversial in developed countries (Higginbottom, 2004). They are carried out under respectful guidelines and ensuring that the benefits are distributed equitably among all stakeholders, but without causing detriment of the natural resources. Therefore the carrying capacity or the limits of acceptable change should be the main measures adopted by authorities. Indeed, in tourism, these restriction rules are “demanded” by particular visitors in a certain manner. The probability of sightings of wildlife is directly proportional to the numbers of wildlife tourists (Tisdell & Wilson, 2002). In other words, if the sightings are not guaranteed, the number of visitor decreases dramatically. In fact, the number of encounters is one of the main concerns stated by tourists as was shown in the study on tourist satisfaction carried out in Lovina (Indonesia) in relation to dolphin watching (Mustika *et al.*, 2012). In this sense, Cardigan Bay offers a medium-high probability of sighting (O’Connor *et al.*, 2009) based on the ‘semi-resident’ status of the bottle nose dolphin population of this Conservation Area; and its significant size, 200 individuals. In another vein, recent studies also confirm this unavoidable link between the dolphin watching activity and the well-being of the dolphin population (Beasley *et al.*, 2010 ; Bejder *et al.*, 2006; Lusseau *et al.* 2006; Green & Higginbottom, 2000). Therefore, the strategy is to make visible the economic benefits of eco-friendly uses of the nature resources (dolphin watching). In this manner, it can contribute, in turn, to the conservation of these protected environments (Cardigan Bay Special Conservation Area). This study was designed in accordance with this philosophy in order to support this governmental task.

At the same time, the understanding of the economic value by the community, which the healthy wildlife population can generate, is another interesting outcome of these studies. Due to the identification of the monetary flow of the nature-based tourism within their own economies, the local population develops more empathy for the conservation strategies. In addition, for more complex tourism strategies focused on the destination, it is important to highlight the non-use values of nature. These values can be core elements of new tourism offers which increase the market value of this destination such as the beauty, calm and welcoming environment. In fact, these non-use values can exceed the use values, hence the tourism strategies should include conservation measures (Higginbottom, 2004) for guaranteeing financial sustainability (Isaacs, 2000; Moore & Rodger, 2010). However, this economic welfare will have success as long as these schemes are integrated with the

realities of modern economies and the people's needs (Shea *et al.* 1997; Higginbottom, 2004). And as Garrod (2002) highlighted, management plans should be based on site-specific information and statistics. In this vein, this study is based on a bottom-up analysis, creating the database from the particular direct experience of the involved players, assuring better the integration of this particular reality. However, this valuable information related to wildlife watching, protected areas and sustainability still suffer from a structural scarcity, becoming a recurrent issue among tourism managers and conservationists. Consequently, world-wide organizations such as IUCN, concerned with this crucial gap because of its impact on protected areas, are working on best practice guidelines (Eagles *et al.*, 2002). But despite this effort, some crucial areas still need more attention from academia or other research institutions such as (Higginbottom, 2004:17 chapter 2):

- the levels of demand for watching particular species;
- the characteristics of tourists who seek wildlife encounters;
- the spectrum of wildlife tourism markets or
- whether existing growth reflects an increasing interest in wildlife or the satisfying of latent demand.

In this sense, the county counts on a centre of higher education (Aberystwyth University) which can provide the highly-skilled workers who are required for this type of specialist tourism. This situation can create a stimulation to settle in the county after finishing the university studies. In addition, it can be a new form of bringing innovation and entrepreneurship to the region. Following this aim, this project has made more visible the necessity to integrate the increasing tourist activity in the future studies of the Centre for Local and Regional Enterprise (CLaRE), mentioned above. This research centre of the School Business and Management (Aberystwyth University) seeks to enhance the well-designed local and regional strategies in all their forms. Therefore, this destination of marine wildlife tourism can become a perfect context for developing a beneficial working relationship between the stakeholders and academic researchers. For example, the University can examine and understand the development pool of the enterprises, and its entrepreneurship and innovation strategies at local and regional level. In turn, the business network can learn from the broad interdisciplinary background and the accuracy of its research methodology.

In summary, this study has contributed to satisfy this gap in knowledge for managers of wildlife tourism destinations. Furthermore, as is usual in all studies, the lessons learned from this particular case study may be applicable to other ecotourism 'places' with similar characteristics in other peripheral sites in Europe. Particularly, in the Welsh context, the dolphin watching tourism in New Quay (Wales), has been shown to be a positive activity for the local economy and its future short-term development in the region with an economic power which can generate an estimated benefit of £ 4, 9 million in the entire county. The scenario analysed shows a growth trend of the marine wildlife tourism sector. At the same time, the conditions for establishing a low carbon economy, encouraging the supplier network to work together are favourable. Consequently, this nature-based tourism destination is ready for the next step through specialization, becoming a truly ecotourism initiative. Thus the future of this community as a whole is inexorably linked to its territory, and to its natural resources, as has always been the case.

Even for those of us who may never see whales, we want to reserve the possibility that we could see them one day — something that economists seek to measure as the elusive but important so-called 'existence value' and 'option value'. We want to ensure that whales are not just part of our whaling past, but integral to our future — our whale watching future. Afterword's Erich Hoyt (O'Connor *et al.*, 2009: 286)

Chapter 7. Bibliography

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Appendices

Appendix 1: Survey Diary Economic Impacts in NQ

Researcher: Olga Garcia

Date:	Starting hour:	Finishing hour:
Weather conditions:	Perception of NQ: empty/crowded	
N^o questionnaires:		
Tour Operator	Length:	Hours:
Tour Operator	Length:	Hours:
Other activities:	Objective:	Hours:

Tour Operator:		
Date:	Starting hour:	Finishing hour:
Boat:	Length:	Crew: Skipper: Speaker:
Weather conditions:	Sightings:	Tourists:
Questionnaires n^o:		
My comments:		

How has the day gone?

Appendix 2: Visitor Economic Impact Survey

Is Dolphin Watching an economic motor for the region?

Visitor Economic Impact Survey

Cardigan Bay Marine Wildlife Centre (CBMWC) and Dolphin Watching businesses of New Quay through Aberystwyth University are conducting some research regarding the economic importance of this tourism activity in the area. This analysis has the aim to understand the economic impact of this activity for sustainable development of the region. The questionnaire should take no longer than ten minutes to complete. Your participation is voluntary and you may withdraw from the research at any time. All results are anonymous and the voluntary collection of a telephone number will only be used for clarification of answers if needed. This information will not be passed on to other parties or stored by any touristic business at the end of the study. If you have any questions regarding the research please contact Dr Brian Garrod bgg@aber.ac.uk or Dr Carl Cater cic@aber.ac.uk.

In CAPITAL LETTERS please ☺

Section 1: About your interest in Dolphin Watching

1. How important was dolphin-watching in deciding to come to New Quay? Please give a score out of 100, zero meaning that dolphin watching was of no importance at all, 100 meaning that it was really your only reason for visiting New Quay

.....%

2. Have you taken or are you intending to take a dolphin-watching boat trip in New Quay?

No Dolphin Survey Boat Trips SeaMôr Dolphin Spotting Boat Trips

3. Have you visited the Cardigan Bay Marine Wildlife Centre? Yes No

4. Where did you get information about Dolphin Watching in New Quay? (Tick as many as are required)

- | | | | |
|-----------------------|--------------------------|-----------------------------------|--------------------------|
| Leaflet | <input type="checkbox"/> | Facebook or Twitter | <input type="checkbox"/> |
| Brochure or guidebook | <input type="checkbox"/> | Friends, family, other travellers | <input type="checkbox"/> |
| Magazine or newspaper | <input type="checkbox"/> | I just turned up today | <input type="checkbox"/> |
| TV | <input type="checkbox"/> | None of the above. Please state: | |
| The Internet | <input type="checkbox"/> | | |

Section 2: About your visit

5. Today's visit to New Quay was:

- Part of a day trip from home. Please go straight to Question 8
- Part of a holiday trip staying in or close to New Quay
- Part of a holiday trip, staying elsewhere in the mid-Wales area
- Part of a holiday trip, staying outside of the mid-Wales area
- Touring around

6a. How many nights do you expect to stay away from home in total?

6b. Which day is this of your holiday?

7. Where are you staying?

8. Where do you normally live?

- United Kingdom Post code
- Overseas Country

9. How many people are in your party? Adults Children

10. How did you travel to New Quay today?

- Private car/van, motorbike, taxi Other (Please state)
- Coach or public bus Mixture (Please explain)
- Cycle or walk

11. What else do you expect to do during your visit to New Quay? Tick as many as required.

- Have a meal in one of the pubs, cafés or restaurants
- Have drinks in one of the pubs, cafés or restaurants
- Do some shopping for groceries, etc
- Shop for souvenirs, etc
- Take a trip on one of the other wildlife/diving boats
- Visit the Tourism Information Centre
- Stay overnight (but have not yet booked)
- Other Please state

Section 3: About your holiday's budget

12. Approximately HOW MUCH money have you spent on your visit or holiday so far and WHERE? Please complete on behalf of your whole party.

Please include as many different areas of spending as possible, with approximate amounts. Please be as specific as you can about the **NAME of establishments** where you spent the money, because the next step is related to these businesses.

If you have booked something, e.g. accommodation, but not actually paid for it yet, then please include it below anyway.

Please remember that we are interested in your WHOLE trip/holiday, not just your spending today and not just your spending in New Quay.

How much?: £..... Name of establishment:..... City/town/village.....

Drinks

How much?: £..... Name of establishment:..... City/town/village.....

How much?: £..... Name of establishment:..... City/town/village.....

Meals

How much?: £..... Name of establishment:..... City/town/village.....

How much?: £..... Name of establishment:..... City/town/village.....

How much?: £..... Name of establishment:..... City/town/village.....

Snacks (ice-creams, sweets, etc...)

How much?: £..... Name of establishment:..... City/town/village.....

How much?: £..... Name of establishment:..... City/town/village.....

Other:

How much?: £..... Name of establishment:..... City/town/village.....

How much?: £..... Name of establishment:..... City/town/village.....

12d Other spending

Dolphin trip

How much?: £..... Name of establishment:..... City/town/village.....

Other activities

How much?: £..... Name of establishment:..... City/town/village.....

Souvenirs

How much?: £..... Name of establishment:..... City/town/village.....

How much?: £..... Name of establishment:..... City/town/village.....

Others:

How much?: £..... Name of establishment:..... City/town/village.....

Section 4: About you

13. I am 1 Female 2 Male

14. Please indicate your age bracket

1 16-24 2 25-34 3 35-44 4 45-54 5 55-64

6 65+ 7 Prefer not to say

15. What is your current employment status?

1 Employed 2 Self employed 3 Retired

4 Student 5 Home maker 6 Unemployed

7 Other Please state

16. Please indicate your highest educational attainment

1 Primary school 2 Secondary school

3 College qualification 4 University

5 Postgraduate degree 6 Other Please state

(Optional) In case we have any queries about the above, please provide a:

Contact telephone number ----- or

E-mail: ----- (please in capital letters)

***** THANK YOU FOR COMPLETING THIS QUESTIONNAIRE *****

For office use only	Time:	Date:	Place:
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Appendix 3: Business Survey. Trial period.

Local Economic Impacts of Dolphin Watching to the New Quay Area

Business Survey

Cardigan Bay Marine Wildlife Centre (CBMWC) and the dolphin watching businesses of New Quay are working with Aberystwyth University to conduct some research into the economic importance of this dolphin watching to the local area.

The research aims to understand what is currently happening with regard to the flow of money into around the local economy; how the money enters, the path it then takes around the business in the local area, and how it leaves. We are attempting to track the flow of money using a methodology called “Local Multiplier 3” (LM3) developed by New Economics Foundation (NEF)⁴⁵.

This approach consists of three steps. The first was undertaken in July and August of this season and involved asking dolphin-watching tourists how and where they spent their holiday budget. Having identified the starting amounts and located the entry points into the local economy of New Quay, the second step involves asking similar kinds of questions of the local business who have been noted by the tourists as places where they have spent their money

We are there for seeking your participation in the research. As the owner or manager of one of these local businesses, your contribution is vital for us to work out how tourists’ spending impacts across the local area (the so-called ‘multiplier effects’ of this spending)

The project works under the provisions of the Data Protection Act. As such, because this questionnaire asks for some financial information, we give you our guarantee that this information will not be shared with any third party without your prior permission in writing. This includes other businesses in the New Quay area. Any results that use in our publications will be aggregated in reporting, so that it will not be possible to identify any individual businesses from them. We give you our guarantee on this also. Any data this is collected will be anonymised and will be disposed of at the end of the study.

Please note that your participation in the project would be voluntary and, if you do agree to participating, you would be free to withdraw at any time.

If you have any questions regarding the research please contact Prof Brian Garrod bgg@aber.ac.uk or Dr Carl Cater cic@aber.ac.uk.

Thank for your help

⁴⁵ More information about it at <http://www.neweconomics.org/publications/entry/the-money-trail>

Section 1: Business profile

1. Contact name and position

2. Type of business:

3. Sector of business:
 - 1 Accommodation
 - 2 Leisure activities
 - 3 Travel
 - 4 Souvenirs
 - 5 Food and drink
 - 6 Mixture (Please explain)
 - 7 Other (Please state)

(Optional) E-mail:

(Please write clearly. We will only use this address if we need to contact you to seek on your data)

Section 2: Business's finances: How is the organization's turnover spent?

The data needed in this section relate to your finances.

4. Approximate Annual Turnover : £..... OR

You can choose one of the following range:

- 1 Up to £ 20.000 2 £ 20.000 – £ 40.000 3 £ 40.000 – £ 60.000
4 £ 60.000 – £ 80.000 5 £ 80.000 – £ 100.000 6 Up to £ 100.000

It is important to highlight that this financial information should be **pre-tax**

Business expenditures (please do not include your personal expenditure here)

This information will be collected using three tables. The first table refers to general payments in any business. The second refers to the suppliers/subcontractors you have used. The third refers to the wages you pay your staff. Each table tries to ascertain whether your payments are local (within the New Quay area), not in the New Quay area but still within the county (of Ceredigion) or non-local.

Please give approximate figures for these.

5.7 Although the financial information demanded here should be pre-tax, we need to know how much of your turnover goes to your local government as tax. So,

Rates tax: £.....

5.8 Suppliers/ subcontractors:

	Local		Non-local
Name/type	New Quay	Cardiganshire /Ceredigion	UK or Overseas
<i>e.g Mr. Price/ Blacksmith</i>	Place: £/%	<i>eg Place: Llanarth</i> £ 1000	£/%
	Place: £/%	Place: £/%	£/%
	Place: £/%	Place: £/%	£/%
	Place: £/%	Place: £/%	£/%
	Place: £/%	Place: £/%	£/%
	Place: £/%	Place: £/%	£/%
	Place: £/%	Place: £/%	£/%
	Place: £/%	Place: £/%	£/%
Total:			

5.9 Staff:

This information is required because the next step of this project is focused on the staff of business in the local area. As such, we need to know the salaries of each member of your business.

Just try to fill it considering how many hours they work in a “typical” week

Local				
Gender-age	Salary/wages £/hour	No. hours/week	No. weeks/year	Full time (F), part time (P) or seasonal (S)
<i>e.g Female-27</i>	<i>£ 6.00</i>	<i>30</i>	<i>8</i>	<i>S</i>
	£			
	£			
	£			
	£			
	£			
	£			
	£			
Total:	£			

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE

For office use only	Time:	Date:	Place:
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Appendix 4: Where does tourism money go?

Where does tourism money go?

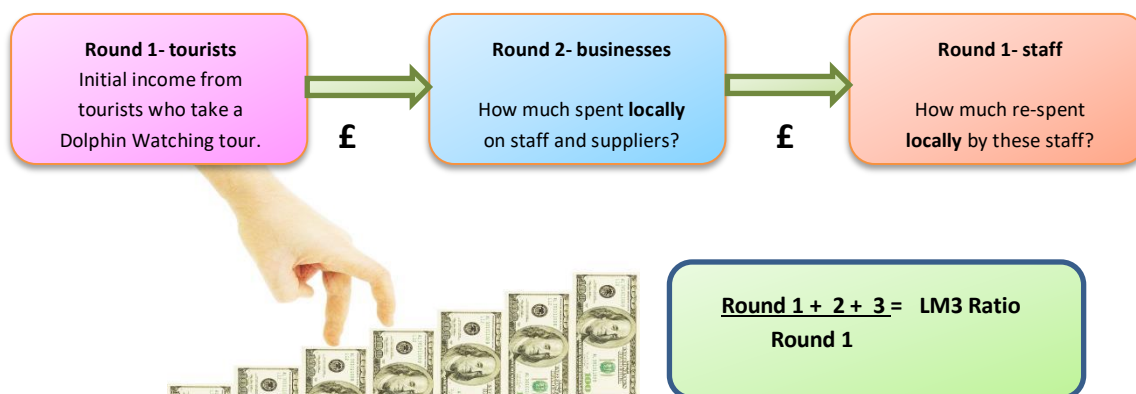
Local Economic Impacts of Dolphin Watching, New Quay Area

What is it currently happening in your economy?

How does money enter? which the path does it then take in the area? And how does it leave?

Aberystwyth University, interested in local economy and its dynamics, has chosen New Quay Area to start a project about **money flow generated by** increasing tourism activity in the region, specifically about **Dolphin watching**.

Through the methodology called “**Local Multiplier 3**” (LM3), this project has as main objective to work out a ratio which will explain how much this touristic activity contributes to economic development of community. This multiplier effect is calculated in three levels:



Multiplier Effect

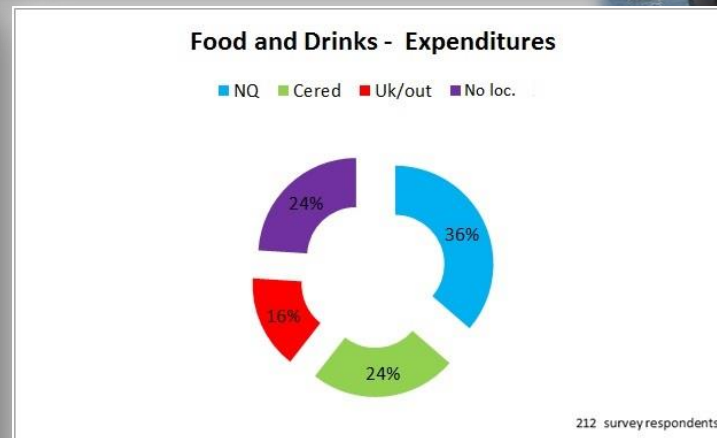
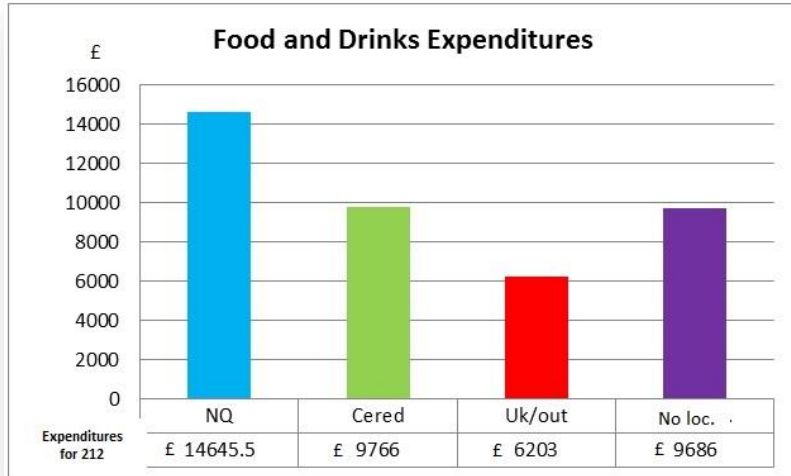
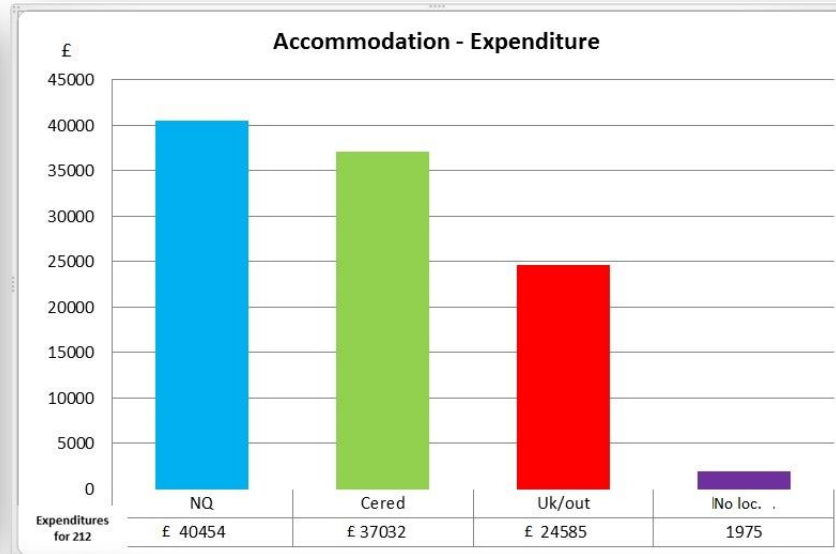
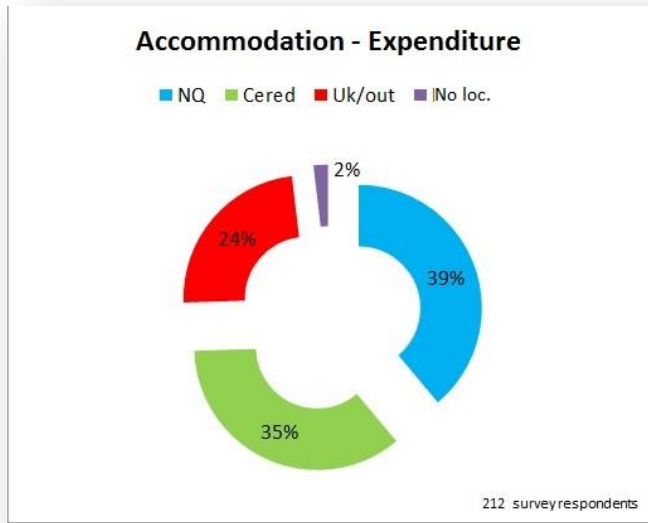
Round 1: Tourists

During summer months (**July-September of 2013**) this stage of project was implemented. Tourists were polled about **how they spend their holiday's budget** when they came to New Quay to watch dolphins. How much and where were key points in this phase.

212 family groups took part in our survey. This process has generated some interesting preliminary findings which summarize following:

Where does tourism money go?

Preliminary findings- October 2013



- New Quay
- Ceredigion
- U.K / Overseas

Now we need your h

Appendix 5: Business Survey. Final version

Local Economic Impacts of Dolphin Watching to the New Quay Area

Business Survey

Cardigan Bay Marine Wildlife Centre (CBMWC) and the dolphin watching businesses of New Quay are working with Aberystwyth University to conduct some research into the economic importance of this dolphin watching to the local area.

The research aims to understand what is currently happening with regard to the flow of money into around the local economy: how the money enters, the path it then takes around the business in the local area, and how it leaves. We are attempting to track the flow of money using a methodology called “Local Multiplier 3” (LM3) developed by New Economics Foundation (NEF)⁴⁶.

This approach consists of three steps. The first was undertaken in July and August of this season and involved asking dolphin-watching tourists how and where they spent their holiday budget. Having identified the starting amounts and located the entry points into the local economy of New Quay, the second step involves asking similar kinds of questions of the local business who have been noted by the tourists as places where they have spent their money.

We are there for seeking your participation in the research. As the owner or manager of one of these local businesses, your contribution is vital for us to work out how tourists’ spending impacts across the local area (the so-called ‘multiplier effects’ of this spending)

The project works under the provisions of the Data Protection Act. As such, we give you our guarantee that this information will not be shared with any third party without your prior permission in writing. This includes other businesses in the New Quay area. Any results that use in our publications will be aggregated in reporting, so that it will not be possible to identify any individual businesses from them. We give you our guarantee on this also. Any data that is collected will be anonymised and will be disposed of at the end of the study.

Please note that your participation in the project would be voluntary and, if you do agree to participate, you will be free to withdraw at any time.

If you have any questions regarding the research please contact Prof Brian Garrod bgg@aber.ac.uk or Dr Carl Cater cic@aber.ac.uk.

Thank for your help

⁴⁶ More information about it at <http://www.neweconomics.org/publications/entry/the-money-trail>

In order to maintain the confidentiality of your figures and taking the aim of the project into account, this questionnaire has been designed to help you estimate the total amounts or percentage of your business expenditure.

We have created tables for you to assist you in working out your local expenditure (attached at the end). You can then copy the final summary data into the boxes on this questionnaire. All we are looking to take away from you is the proportion of spending you do locally within New Quay, in the wider county and outside of the county. You then keep the detailed working tables – we do not want these. As such, the survey is **not** asking you to submit detailed information on your business finances.

Section 1: Business profile

6. Contact name and position

7. Type of business:

8. Sector of business:

- | | |
|---|--|
| 1 <input type="checkbox"/> Accommodation | 2 <input type="checkbox"/> Leisure (recreation) activities |
| 3 <input type="checkbox"/> Travel | 4 <input type="checkbox"/> Souvenirs |
| 5 <input type="checkbox"/> Food and drink | 6 <input type="checkbox"/> Mixture (Please explain) |
| 7 <input type="checkbox"/> Other (Please state) | |

(Optional) E-mail:

(Please write clearly. We will only use this email address in the unlikely event that we need some further clarification of your data)

Section 2: Business's expenditure: How is the organisation's turnover spent?

The data needed in this section relate to your **business expenditure** (please do not include your personal expenditure here).

This information will be collected using two tables. The first tries to apportion your spending depending on whether the recipient was local or non-local. The second identifies how many staff you employed.

The next step of the project is focused on the staff of business in the local area, as such, we need to work with them into similar process. For that, it is crucial for this survey to get in touch with them. Therefore, could you please facilitate any personal contact details to solicit their collaboration?

Name: e-mail/phone number:.....

Name: e-mail/phone number:.....

Name: e-mail/phone number:.....

Name: e-mail/phone number:.....

Name: e-mail/phone number:.....

Name: e-mail/phone number:.....

Name: e-mail/phone number:.....

Name: e-mail/phone number:.....

Name: e-mail/phone number:.....

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE

For office use only	Time:	Date:	Place:
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Calculation Tables

(Please keep these forms for your own records)

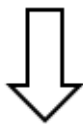
Please try to be as precise as you can.

All Turnover for this period £..... (A)

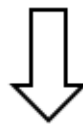
5. Spending	Local		Non-local
Name/type	New Quay	Cardiganshire /Ceredigion	UK or Overseas
<i>5.1 e.g</i> Fuel & utilities	<i>Place: Texaco</i> £ 500		
5.1 Fuel & utilities	£	£	£
5.2 Rent &/or Mortgage	£	£	£
5.3 Repairs and maintenance	£	£	£
5.4 Training	£	£	£
5.5 New investment	£	£	£
5.6 Others:	£	£	£
.....	£	£	£
.....	£	£	£
.....	£	£	£

5.7 Suppliers/ subcontractors	£	£	£
<i>e.g Mr. Price/ Blacksmith</i>	£	<i>eg Place: Llanarth £ 1000</i>	£
.....	£	£	£
.....	£	£	£
.....	£	£	£
.....	£	£	£
.....	£	£	£
.....	£	£	£
.....	£	£	£
Total (£):	B £	C £	D £
Total (%):	B *100/A =	C *100/A =	D *100/A =

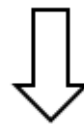
ENTER ON MAIN
QUESTIONNAIRE



X



Y



Z

6. Staff	Local			
Month	Full time (nº of staff)	Part time (nº staff)	Seasonal (nº of staff)	TOTAL STAFF COSTS
<i>e.g. January</i>	2		1	£2500
January				
February				
March				
April				
May				
June				
July				
August				
September				
October				
November				
December				
TOTAL for reported turnover period:				E
Total (%):				E*100/ A=

Appendix 6: Staff Survey

Local Economic Impacts of Dolphin Watching to the New Quay Area

Staff Survey

Cardigan Bay Marine Wildlife Centre (CBMWC) and the dolphin watching businesses of New Quay are working with Aberystwyth University to conduct some research into the economic importance of this dolphin watching to the local area.

The research aims to understand what is currently happening with regard to the flow of money into around the local economy: how the money enters, the path it then takes around the business in the local area, and how it leaves. We are attempting to track the flow of money using a methodology called “Local Multiplier 3” (LM3) developed by New Economics Foundation (NEF)⁴⁷.

This approach consists of three steps. The first was undertaken in July and August of this season and involved asking dolphin-watching tourists how and where they spent their holiday budget. Having identified the starting amounts and located the entry points into the local economy of New Quay, the second step involved asking similar kinds of questions of the local business who have been noted by the tourists as places where they have spent their money

The final step is to talk to the staff of these local businesses to establish their contribution. To do this, we need to understand the consumer habits of the local population, so are seeking your participation in the research. As a member of staff your contribution is vital for us to work out how tourists’ spending impacts on the local area (the so-called ‘multiplier effects’ of this spending). Your help will assist us in identifying the local economic scenario of New Quay, as well as helping us plan for the future.

The project works under the provisions of the Data Protection Act. As such, we give you our guarantee that this information will not be shared with any third party without your prior permission in writing. Any results that use in our publications will be aggregated in reporting, so that it will not be possible to identify any individual from them. We give you our guarantee on this also. Any data this is collected will be anonymised and will be disposed of at the end of the study.

Please note that your participation in the project would be voluntary and, if you do agree to participating, you will be free to withdraw at any time. If you have any questions regarding the research please contact Prof Brian Garrod bgg@aber.ac.uk or Dr Carl Cater cic@aber.ac.uk.

Thank for your help

⁴⁷ More information about it at <http://www.neweconomics.org/publications/entry/the-money-trail>

In order to maintain the confidentiality of your figures and taking the aim of the project into account, this questionnaire has been designed to help you estimate the percentages of your personal expenditure spent locally and non-locally.

We have therefore created a calculation table to assist you in working out your local and non-local expenditure (see attached). You can then copy the summary data into the boxes on this questionnaire. We would therefore like you to work out your expenditure on the table and copy the totals into this questionnaire for submission to us, but to keep this breakdown table yourself. This survey **only** needs to know how your expenditure are divided between the local and non-local economy, and is **not** looking for detailed information about your personal finances.

Section 1: About you

1. I am 1 Female 2 Male

2. Please indicate your age bracket

- 1 16-24 2 25-34 3 35-44 4 45-54 5 55-64
6 65+ 7 Prefer not to say

3. Please indicate your highest educational attainment

- 1 Primary school 2 Secondary school
3 College qualification 4 University
5 Postgraduate degree 6 Other Please state

4. Where are you working? Name of your place of work

.....

5. What is your job? Position

.....

6. What is your current employment status?

- 1 Employed 2 Self-employed 3 Other (Please state)

7. Is your job year-round full-time, year-round, part-time, or seasonal?

- 1 Full time 2 Part time 3 Seasonal

7. Where do you live? (During the tourism season)

- 1 New Quay First half of post code
- 2 Ceredigion/Cardiganshire First half of post code

9. Where do you normally live? (If different to above)

- 1 United Kingdom First half of post code
- 2 Overseas Country

Section 2: About your personal expenditures. How is your salary spent?

10. The information in this section relates to your personal expenditures. Please give your answers in terms of you weekly or monthly pay:

- 1 monthly 2 weekly

3. This data is related to which month:

It is important to highlight that this financial information should be **post-tax**, i.e. after you have paid any income tax and national insurance.

Remember; please fill in the calculation table first. Once you have completed it, copy the totals across to here.

11. Personal expenditure s	Local		Non-local
	New Quay (X)	Cardiganshire /Ceredigion (Y)	UK or Overseas (Z)
Total:	%	%	%

(Optional) E-mail:

(Please write clearly. We will only use this email address in the unlikely event that we need to contact you to seek clarification of your data)

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE

For office use only	Time:	Date:	Place:
----------------------------	--------------	--------------	---------------

Calculation Table

(Please keep this for your own records)

This table tries to help you work out whether your income is spent local (within the New Quay area), not in the New Quay area but still within the county (of Ceredigion) or is non-local.

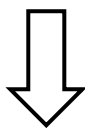
Please try to be as precise as you can.

¹ monthly ² weekly

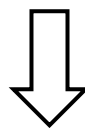
Total income for this period, less tax £.....

11. Personal expenditures	Local		Non-local
Name/type	New Quay	Cardiganshire /Ceredigion	UK or Overseas
<i>Food</i> 11.1 Groceries/take away	Place: £ :	<i>Example:</i> Place: Morrison-Aberystwyth £ 100	£
<i>Food</i> 11.1 Groceries/take away	£ :	£	£
<i>Going out</i> 11.2 Drinks, dinners...	£ :	£	£
<i>Travel</i> 11.3 Fuel	£ :	£	£
<i>Travel</i> 11.4 Bus ticket	£ :	£	£
<i>Household products</i> 11.5 Cleaning/ toilet tries ...	£ :	£	£
11.6 Repairs and maintenance	£ :	£	£

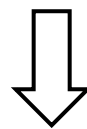
Leisure activities			
11.7 Cinema, museums..	£ :	£	£
11.8 Clothes	£ :	£	£
11.9 Rent &/or Mortgage	£ :	£	£
11.10 Council taxes	£ :	£	£
11.11 Training courses	£ :	£	£
11.12 Others:			
.....			
.....			
Total (£):			
Total (%):	$\frac{\text{£ total NQ} * 100}{\text{£Total Income}} =$	$\frac{\text{£ total county} * 100}{\text{£Total income}} =$	$\frac{\text{£ total non-local} * 100}{\text{£Total income}} =$



X



Y



Z

ENTER ON MAIN QUESTIONNAIRE

Appendix 7: Estimation of the occupancy (pax.). Dolphin watching tourism

RED COMPANY

	No. of weeks	No. of days	% occupancy	Boats	Capacity/boat	No. trips	No. pax/t trip
<i>Peak season</i>	6	42	100	I red	67	126	8442
				II red	53	84	4452
<i>Low season</i>	17	119	50	I red	33.5	238	7973
				II red	26.5	119	3153.5
	4	28	25	I red	16.75	56	938
				II red	13.25	28	371
				I red: 3 times/peak s. 2 times/ low season		Estimated total pax.=	
				II red: 2 times/peak s. 1 time/ low season		25,329.5	

Estimated total pax

<i>Red company</i>	25,329.5
<i>Blue company</i>	3,108
<i>White company</i>	4,914
Total=	33,351.5

BLUE COMPANY

	No. of weeks	No. of days	% occupancy	Boats	Capacity/boat	No. trips	No. pax/t trip
<i>Peak season</i>	6	42	100	A blue	12	126	1512
<i>Low season</i>	17	119	50		6	238	1428
	4	28	25		3	56	168
				A blue: 3 times/peak s. 2 times/ low season		Estimated total pax.=	
						3108	
						Real total pax.=	
						█	

Real total pax

<i>Red company</i>	█
<i>Blue company</i>	█
<i>White company</i>	█
Total=	33,334.5

WHITE COMPANY

	No. of weeks	No. of days	% occupancy	Boats	Capacity/boat	No. trips	No. pax/t trip
<i>Peak season</i>	6	42	100	1.white	12	126	1512
				2.white	12	84	1008
<i>Low season</i>	17	119	50	1.white	6	238	1428
				2.white	6	119	714
	4	28	25	1.white	3	56	168
				2.white	3	28	84
				1.white : 3 times/peak s. 2 times/ low season		Estimated total pax.=	
				II red: 2 times/peak s. 1 time/ low season		4914	
						Real total pax.=	
						█	

Note: the number of passengers related to the Dolphin watching during the season of 2013 was facilitated by the White and Blue companies. The number of passengers of Red company had to be estimated under these assumptions.

**Appendix 8: Estimated benefit for Dolphin watching businesses based on scenarios (type of parties).
New Quay, season 2013**

Red Company	Blue Company									
	1 c.+ 3 a.		1 c.+ 2 a.		2 c.+ 2 a.		2a		2 c.+ 1 a.	
1 c.+ 3 a.	1 c.+ 3 a.	340528.563	1 c.+ 3 a.	339229.4	1 c.+ 3 a.	336643.6	1 c.+ 3 a.	344413.6	1 c.+ 3 a.	334049.9
	1 c.+ 2 a.	338022.649	1 c.+ 2 a.	336723.5	1 c.+ 2 a.	334137.6	1 c.+ 2 a.	341907.6	1 c.+ 2 a.	331544
	2 c.+ 2 a.	333031.563	2 c.+ 2 a.	331732.4	2 c.+ 2 a.	329146.6	2 c.+ 2 a.	336916.6	2 c.+ 2 a.	326552.9
	2a	348025.563	2a	346726.4	2a	344140.6	2a	351910.6	2a	341546.9
	2 c.+ 1 a.	328027.649	2 c.+ 1 a.	326728.5	2 c.+ 1 a.	321549	2 c.+ 1 a.	331912.6	2 c.+ 1 a.	321549
1 c.+ 2 a.	1 c.+ 3 a.	329737.377	1 c.+ 3 a.	328438.2	1 c.+ 3 a.	325852.4	1 c.+ 3 a.	333622.4	1 c.+ 3 a.	323258.8
	1 c.+ 2 a.	327231.464	1 c.+ 2 a.	325932.3	1 c.+ 2 a.	323346.5	1 c.+ 2 a.	331116.5	1 c.+ 2 a.	320752.8
	2 c.+ 2 a.	322240.377	2 c.+ 2 a.	320941.2	2 c.+ 2 a.	318355.4	2 c.+ 2 a.	326125.4	2 c.+ 2 a.	313351.5
	2a	337234.377	2a	335935.2	2a	333349.4	2a	341119.4	2a	330755.8
	2 c.+ 1 a.	317236.464	2 c.+ 1 a.	315937.3	2 c.+ 1 a.	313351.5	2 c.+ 1 a.	321121.5	2 c.+ 1 a.	310757.8
2 c.+ 2 a.	1 c.+ 3 a.	308219.625	1 c.+ 3 a.	306920.5	1 c.+ 3 a.	304334.6	1 c.+ 3 a.	312104.6	1 c.+ 3 a.	301741
	1 c.+ 2 a.	305713.712	1 c.+ 2 a.	304414.6	1 c.+ 2 a.	301828.7	1 c.+ 2 a.	309598.7	1 c.+ 2 a.	271545.9
	2 c.+ 2 a.	300722.625	2 c.+ 2 a.	299423.5	2 c.+ 2 a.	296837.6	2 c.+ 2 a.	304607.6	2 c.+ 2 a.	294244
	2a	315716.625	2a	314417.5	2a	311831.6	2a	319601.6	2a	309238
	2 c.+ 1 a.	295718.711	2 c.+ 1 a.	294419.6	2 c.+ 1 a.	291833.7	2 c.+ 1 a.	299603.7	2 c.+ 1 a.	289240.1
2a	1 c.+ 3 a.	372837.5	1 c.+ 3 a.	371538.4	1 c.+ 3 a.	368952.5	1 c.+ 3 a.	376722.5	1 c.+ 3 a.	366358.9
	1 c.+ 2 a.	370331.587	1 c.+ 2 a.	369032.4	1 c.+ 2 a.	366446.6	1 c.+ 2 a.	374216.6	1 c.+ 2 a.	363853
	2 c.+ 2 a.	365340.5	2 c.+ 2 a.	364041.4	2 c.+ 2 a.	361455.5	2 c.+ 2 a.	369225.5	2 c.+ 2 a.	358861.9
	2a	380334.5	2a	379035.4	2a	376449.5	2a	384219.5	2a	373855.9
	2 c.+ 1 a.	360336.586	2 c.+ 1 a.	359037.4	2 c.+ 1 a.	356451.6	2 c.+ 1 a.	364221.6	2 c.+ 1 a.	353858
2 c.+ 1 a.	1 c.+ 3 a.	286663.102	1 c.+ 3 a.	285364	1 c.+ 3 a.	282778.1	1 c.+ 3 a.	290548.1	1 c.+ 3 a.	280184.5
	1 c.+ 2 a.	284157.189	1 c.+ 2 a.	282858	1 c.+ 2 a.	280272.2	1 c.+ 2 a.	288042.2	1 c.+ 2 a.	277678.6
	2 c.+ 2 a.	279166.102	2 c.+ 2 a.	277867	2 c.+ 2 a.	275281.1	2 c.+ 2 a.	283051.1	2 c.+ 2 a.	272687.5
	2a	294160.102	2a	292861	2a	290275.1	2a	298045.1	2a	287681.5
	2 c.+ 1 a.	274162.188	2 c.+ 1 a.	272863	2 c.+ 1 a.	270277.2	2 c.+ 1 a.	278047.2	2 c.+ 1 a.	267683.6

Legend

Type of party	1 child+ 3 adults	1 child + 2 adults	2 child + 2 adults	2 adults	2 child + 1 adult
Acronyms	1 c.+ 3 a.	1 c.+ 2 a.	2 c.+ 2 a.	2a	2 c.+ 1 a.

Appendix 9: Dolphin watchers expenditure. New Quay, season 2013

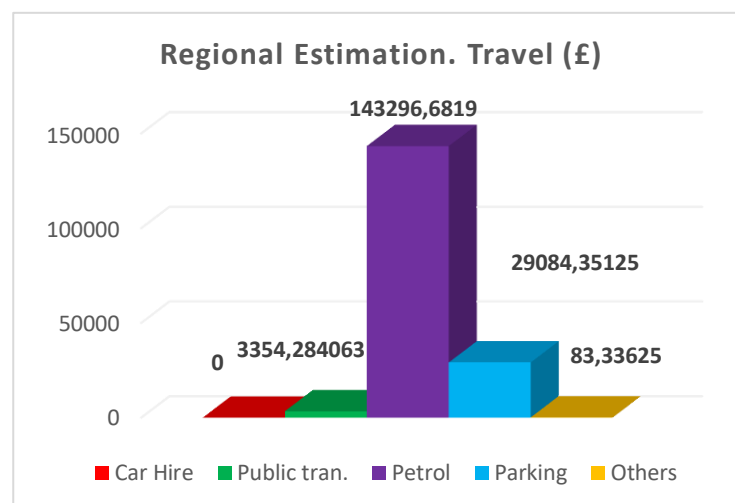
Travel item

Total estimation. Travel. New Quay, season 2013

	Car Hire	Public transp.	Petrol	Parking	Others	Total
<i>Survey (£)</i>	1700	728.5	13805.5	1277	2	17,513
<i>%</i>	9.7	4.2	78.8	7.3	0.01	
<i>Estimated (£)</i>	70,835.8	30,355.2	575,249.3	53,210.2	83.3	729,733.9

Regional estimation. Travel. New Quay, season 2013

	Car Hire	Public transport.	Petrol	Parking	Others	Total
<i>Survey (£)</i>	0	80.5	3,439	698	2	4,219.5
<i>%</i>	0	1.9	81.5	16.5	0.05	
<i>Estimation (£)</i>	0	3,354.3	143,296.7	29,084.4	83.3	175,818.7
Regional= New Quay + Ceredigion						



Food and drinks item

Regional estimation. Food and Drinks. New Quay, season 2013

	Groceries	Drinks	Meals	Snacks	Others	Total
<i>Survey (£)</i>	7853.3	3783.5	10789	1423.5	1656.2	25505.5
<i>%</i>	30.8	14.8	42.3	5.6	6.5	100
<i>Estimation (£)</i>	327,232.3	157,651.4	449,557.4	59,314.58	69,010.75	1,062,766

Appendix 10: Local Multiplier Effect 3 (LM3) by sectors. Dolphin watching tourism.

New Quay, summer 2013

Breakdown of Economic Multiplier Effect. Accommodation. New Quay, summer 2013

Round 1		Round 2		Round 3		
	NQ	Ceredigion	NQ	Ceredigion	NQ	Ceredigion
£	41304	79436				
		%	12.9	100		
		£	5320	79436	%	27.8
					£	1480.9
						65834.2

	NQ	Ceredigion
Round 1 + 2 + 3 = Round 1	$\frac{41304+5320+1480.9}{41304}$	$\frac{79436+79436+65834.2}{79436}$
LM3	1.2	2.8

Breakdown of Economic Multiplier Effect. Food and drinks. New Quay, summer 2013

Round 1		Round 2		Round 3		
	NQ	Ceredigion	NQ	Ceredigion	NQ	Ceredigion
£	15571.5	25505.5				
		%	10	40		
		£	1557.2	10202.2	%	62.8
					£	978.5
						10202.2

	NQ	Ceredigion
Round 1 + 2 + 3 = Round 1	$\frac{15571.5+1557.2+978.5}{15571.5}$	$\frac{25505.5+10202.2+10202.2}{25505.5}$
LM3	1.2	1.8

Breakdown of Economic Multiplier Effect. Souvenirs. New Quay, summer 2013

		Round 1					
		NQ	Ceredigion	Round 2			
£	1159	1474	NQ	Ceredigion	Round 3		
		%	41.6	41.8		NQ	Ceredigion
		£	481.9	616.2	%	60.2	89
					£	290.2	548.5

	NQ	Ceredigion
Round 1+ 2 + 3 = Round 1	$\frac{1159+481.9+290.2}{1159}$	$\frac{1474+616.2+548.5}{1474}$
LM3	1.7	1.8

Breakdown of Economic Multiplier Effect. Dolphin watching businesses. New Quay, summer 2013.

		Round 1					
		NQ	Ceredigion	Round 2			
£	5350	5350	NQ	Ceredigion	Round 3		
		%	40.9	67.2		NQ	Ceredigion
		£	2185.8	3596.4	%	54.2	100
					£	1185.6	3596.4

	NQ	Ceredigion
Round 1+ 2 + 3 = Round 1	$\frac{5350+2185.8+1185.6}{5350}$	$\frac{5350+3596.4+3596.4}{5350}$
LM3	1.6	2.3

