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**TOWARD A BETTER UNDERSTANDING OF MOTIVATIONS
FOR A GEOTOURISM EXPERIENCE:
A SELF-DETERMINATION THEORY PERSPECTIVE**

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**This thesis is presented in fulfilment of the requirements for the award of
Doctor of Philosophy**

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ABSTRACT

Toward a better understanding of motivations for a geotourism experience:

A Self-Determination Theory perspective

Abstract

Motivation theories and studies play a vital role in understanding why tourists travel and the kind of activities they engage in whilst away from home. By reviewing the literature, it is apparent that previous tourism studies pay scant attention to the issue of why people travel to geosites and this important issue is still an undeveloped area of study. Therefore, investigating the motivations of tourists undertaking a geotourism (geology and tourism) experience reflects an urgent need to bridge the gap in the geotourism literature.

The purpose of this study is to explore the different motivations behind tourists engaging in a geotourism experience and to investigate the behavioural intention of tourists to revisit a geosite. Guided by Self-Determination Theory (Deci & Ryan, 1985, 2000), this research seeks to investigate what are different types of motivation (intrinsic motivation, extrinsic motivation and amotivation) behind the tourists undertaking a geotourism experience and the potential relationship between those motivations and the desire for repeat visitations to the same geosite.

Quantitative methodology was employed, consisting of a self-administered questionnaire that involved inviting a convenience sample of 600 tourists visiting Crystal Cave in Yanchep National Park and The Pinnacles in Australia, as well as Wadi Rum and the Dead Sea in Jordan between 2010 - 2011. The current study applied validated and reliable scales which have been broadly used in different domains of life to measure the motivations and behavioural intention.


The results of this study revealed that the main intrinsic motivation for the respondents in Jordan and Australia were ‘to escape from the hustle and bustle of the daily life routine’, ‘relaxation’, ‘enjoyment’, ‘a sense of wonder’, and ‘gaining knowledge’. In addition, it showed that the main extrinsic motivation was the identified regulations.

Correlation analysis and a series of multiple regressions were conducted to explore the relationship between tourists’ motivation and their behavioural intention to visit geosites repeatedly. The results revealed that the intrinsic motivation and identification of extrinsic motivation were significant predictors of the behavioural intention (loyalty) to re-visit geosites. There is a weak and negative relationship between intrinsic motivation and identified extrinsic motivation with the propensity to switch. In addition, there was a significantly positive relationship between amotivation and propensity to switch, internal and external responses to problems.

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Signed.....

Date...28/11/2011.....

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CHAPTER ONE - INTRODUCTION

1.0 Introduction

Chapter One introduces the research. It outlines the background of the research, the research problem, the research questions of the study, and the major purposes of this research. Additionally, it describes the significance of the research. Finally, this chapter provides an outline of the remaining chapters of this thesis.

1.1 Background to the study

The number of international tourists' arrivals was 940 million and the total international tourism receipts were US \$919 in 2010 (UNWTO 2011), (Table 1.1). Furthermore, the number of tourists' arrivals will exceed more than 1.6 billion in 2020 according to the forecast of the World Tourism Organization (UNWTO, 2011). By 2020 the rate of intraregional tourists will reach about 1.18 billion and the long-haul tourists will exceed 0.380 billion. Thus, the average annual growth will probably be 4.1% for the years 1995-2020 (UNWTO, 2001). Therefore, tourism is considered as the largest commodity in the international business and trade for many countries and one of the largest and significant three industries for other countries in recent years. Therefore, the tourism industry represents a prominent social and economical worldwide force (Goeldner & Ritchie, 2009).

Table 1.1: International Tourists' Arrivals and Tourism Receipts in 2010

Destination	Number of tourists (Million)	%	International tourism receipts (US\$/ Billion)	%
Africa	49	5	31	3
Americas	150	16	182	20
Asia & Pacific	204	22	248	27
Europe	477	51	406	44
Middle East	60	6	50	14
Total	940		919	

Source: Adapted from UNWTO (2011).

These huge numbers have inevitably led to criticism that some sensitive locations and communities will be adversely affected by mass tourism. According to Butcher (2003, p. 21), mass tourism has common stereotypes such as “crude, homogenous, insensitive to hosts, involving resorts that alter the landscape, crowded, frivolous.” Mass tourism also could be classified by the following characteristics:

- Uniformity: because it is preoccupied with providing the standard mass product for mass tourists, its supply is homogeneous rather than offering different types of cultural experiences.
- Crudity: mass tourism contributes to a lack of control and much bad behaviour, such as prostitution and intensive alcohol consumption.
- Damaging: the nature of this destruction is twofold: firstly, it negatively affects environments via fauna and flora; and secondly, it harms the local communities and domestic cultures (Butcher, 2003).

Interestingly, the statistics of the World Tourism Organization show that a large proportion of the global tourism market is concentrated in the First World Countries. Moreover, it is rare to see third world countries in the list of top ten destinations in the world (Mowforth & Munt, 2008). As a result, the negative effects of mass tourism have increased resentment and marginality for poor local communities in third world countries, as depicted in the famous words of a native Hawaiian:

We do not want tourism. We do not want you. We do not want to be degraded as servants and dancers. This is cultural prostitution. I do not want to see a single one of you in Hawaii. There are no innocent tourists (Huybers, 2007, p. 16).

Acknowledgement of the need to change the nature and scope of mass tourism has resulted from its negative effects on the environment, individuals and communities (Spencer, 2010). As a result, new important concepts have been added to the tourism jargon, for example, ‘sustainable tourism’ and ‘alternative tourism’. Since the 1990s, there has been an increasing quantity of literature on these aspects of tourism for two reasons. First, there has been much discussion on the virtues of sustainable development in 1980s; and second,

there has been the recognition of the effects of mass tourism's growth on the environment since the end of the World War II (Cornelissen, 2005).

Most importantly, geotourism is one of the new forms of sustainable tourism and as such most dictionaries do not explain it (Joyce, 2006). The geotourism research database and literature are still scant because of the lack of quantitative and qualitative studies. For example, the Google search engine generates about 1.8 million websites, for the the word 'geotourism' which most of these related to the *National Geographic* magazine which promotes one type of geotourism. In contrast an ecotourism search generates about 19.4 million sites. Geotourism is founded on using sites with geological features and intrinsic values without damaging them; it has led the evolution of 'education-based tourism'. In addition, geotourism applies the notions of sustainability and supports the local features of the sites by encouraging the use of local products and activities (Komoo & Patzak, 2008).

Whilst different previous forms of natural area tourism, for example, ecotourism and wildlife tourism have dealt with biotic attributes (living things), such as fauna and flora, geotourism focuses primarily on the abiotic attributes (non-living things), such as landforms and geological features (Sadry, 2009). Better understanding of the biotic, abiotic and cultural attributes for the ecosystem in natural area tourism can provide environmental benefits for all parts of the tourism industry (Newsome, Moore & Dowling, 2002). Recently the importance of abiotic conservation has been more strongly recognized and significant developments for "geoconservation theory and practice" have emerged. Accordingly, official geodiversity conservation programs have been launched in many countries (Gray, 2004). The United Nations Educational, Scientific and Cultural Organization (UNESCO) has fostered geoconservation to help develop geotourism and increase global awareness in its importance. UNESCO has also made many significant contributions in expanding the culture of geoconservation, geoheritage and geotourism activities (Table 1.2). However, the most important contribution of UNSECO is in developing geotourism activities through its geoparks largely without the participation of the World Tourism Organization (WTO). Moreover, the WTO database still lacks any valuable information about the scope of geotourism and its outcomes.

Table 1.2: Key Events and Conferences of Geology and Geotourism

Date	The Key event
1990	Hose introduced a geotourism definition
1991	First International Symposium on the Protection of Geological Heritage: Declaration of the Rights of the Memory of the Earth, Digne-les-Bains, France
2000	Founding of the European Geoparks Network
2001	Agreement for cooperation between the Division of Earth Sciences of UNESCO and the European Geoparks Network
2004	Formation of the Global Network of National Geoparks assisted by UNESCO-First International Conference on GEOPARKS held in Beijing, China
2006	The first published book about geotourism was launched by Dowling and Newsome
2006	Second International Conference on Geoparks, Belfast, Northern Ireland, UK
2008	Inaugural Global Geotourism Conference, Fremantle in Western Australia
2008	The Third International UNESCO Conference on Geoparks, Osnabruck, Germany
2010	Dowling and Newsome introduce a holistic geotourism definition and launched new geotourism books
2010	The 4 th international UNESCO Conference on Geoparks held in Langkawi, Malaysia The Second Global Geotourism Conference held in Mulu, Malaysia
2011	The Third Global Geotourism Conference in Muscat, Sultanate of Oman
2011	International Congress of Geotourism in Arouca Geopark, Portugal

Source: Based on UNESCO (2006) and others

Geotourism has been around for a long time but the wide recognition of geotourism is new. According to Hose (2008, p. 37), “The term passed into general usage in the early 1990s, although its antecedents date back to the seventeenth century”. However, Geotourism represents an ‘added value’ to international tourism. Nowadays, many countries have increased their focus on geotourism, particularly relying on their geotourism attractions. Australia has paid full attention to geotourism and introduced its geotourism attractions as the main tourism attractions in this large country. As a result, Australia has protected and promoted many iconic geological sites, such as Uluru and Kata Tjuta (Dowling & Newsome, 2010).

Some notable geotourism developments have occurred in the Middle East. The Sultanate of Oman recently recognized the importance of geotourism for enhancing the flow of international tourists, and enriching its tourism products and economy through the development of such geotourism sites as Al Hota Cave in south west of Muscat, which is considered to be the first show cave in the Gulf area (Lawrence, 2010). Iran has established some geotourism sites and developed access to many caves (The Cataleh Khore Cave, Alisadr Cave, and Karaftoo Cave) in order to attract international and regional tourists (Amrikazemi & Mehrpooya, 2006).

Portugal also has rich geotourism opportunities. The first geopark in Portugal (The Naturtejo Geopark, 2006) is considered one of the most important and large Geoparks in Europe. A new geopark (Azores Geopark, 2009) reflects the growth in geotourism and geoconservation in Portugal in recent years (Brilha, 2009). Similarly, the geotourism experience has developed significantly in South Korea, which has introduced more than 13 caves to the public, from among 300 caves discovered in the last decades (Kim, Kim, Park, & Guo, 2008). Moreover, many notable geotourism and geoparks experiences are to be found in Brazil, Chile, China, Greece, Hong Kong, Iceland, Ireland, Italy, Malaysia, and Mauritius (Dowling, 2011).

Geotourism presents a different concept and vision in the US tourism literature. According to the National Geographic, geotourism is, “Tourism that sustains or enhances the geographical character of the place being visited, including its environment, culture, aesthetics, heritage and the well-being of its residents” (National Geographic, 2009). This definition represents a mix of geotourism, ecotourism, sustainable tourism, and geographic tourism. It could be argued that the geological and geomorphologic features are not specifically emphasised.

Recently, Newsome, Dowling, & Leung (In Press) indicate that the scope of geotourists may include both independent individuals and group travelling to geological tourism sites. This tourist segment may travel to geological attractions in either ‘natural areas’ or ‘urban/built areas’.

Geotourism's product has grown rapidly. The list of the global geoparks has reached 87, with, according to UNESCO (2011), 27 member nations being added since 2004 (Table 1.3). One of the more significant benefits to emerge from the geoparks movement is that it has connected all geoparks and combined them under one global program patronized by UNESCO. Moreover, another benefit for such movement is that geoparks can play a vital role in enhancing the socio-economic development in an area. It also can strengthen the relationship between the local communities and their land .

Table 1.3: The Global Geoparks Network of UNESCO

Member nations	Number of geoparks	Year of foundation
Australia	1	2008
Austria	1	2004
Brazil	1	2006
Canada	1	2010
China	26	2004, 2005, 2006, 2008, 2009, 2010, 2011
Croatia	1	2007
Czech Republic	1	2005
Finland	1	2010
France	3	2004, 2005, 2011
Germany	6	2004, 2005
Greece	3	2004, 2010
Hungary-Slovakia	1	2010
Iceland	1	2011
Iran	1	2006
Ireland	2	2004, 2011
Italy	8	2004, 2005, 2007, 2008, 2010, 2011
Japan	5	2010, 2011
Malaysia	1	2007
Norway	1	2006
Portugal	2	2006, 2009
Romania	1	2005
South Korea	1	2010
Spain	5	2004, 2006, 2010, 2011
United Kingdom	8	2004, 2005, 2007, 2009
Vietnam	1	2010

Source: Based on UNESCO Global Geoparks Network (2011)

1.2 Research problem

To date there have been few studies of the geotourism phenomenon because of its novelty as a stand-alone type of tourism. Recent developments in geotourism have heightened the need for such studies. The existing literature on geotourism (Hose, 1995, 1996, 2005, 2006, 2008; Lawrood & Prosser, 1998; Buckley, 2003; Xun & Ting, 2004; Gray, 2004; Dowling & Newsome, 2006, 2010; Newsome & Dowling, 2010; Newsome, D., Dowling, R., & Leung, Y. (in press); Joyce, 2006; Amrikazemi & Mehrpooya, 2006; Reynard, 2008; Panizza & Piancante, 2008; Al Musharfi & Lawrence, 2008; Dowling, 2009; Brozinski, 2009; Komoo & Patzak, 2008; Sadry, 2009; Rodrigues JC. 2009; Farsani, Coelho & Costa, 2009, 2010, Moreira & Bigarella, 2010) only relates to a small number of areas, and concentrates on the scope and nature of geotourism, the definition of geotourism, geoparks, the relation between geotourism and other forms of tourism (mostly, ecotourism), and geotourism and interpretation. Notwithstanding the significance of these studies in paving the way for establishing a geotourism paradigm, they pay scant attention to the issue of why people travel including their motivations for visiting geosites. This important issue is still an undeveloped area of study.

The literature review revealed that motivation theories and studies play a vital role in developing different types of sciences. The theories of motivation have contributed to the evolution of psychology as a distinctive facet of research (Pearce, 1982). In the tourism context, Gnoth *et al.* (2000, p. 23) contend, “To date, individual feelings have received little attention in tourism research ...” However, motivation is the most significant and complicated part of tourism demand. In addition, it is considered a most fundamental and crucial topic in tourism studies. If there is no motivation in tourism, demand will not exist (Sharpley, 2006). Accordingly, several studies of tourist motivations have been carried out on different types of tourism (Cohen, 1972, 1974; Plog, 1974; Crompton, 1979; Iso-Ahola, S. & Allen, 1982; Dann, 1981; Bear & Ragheb, 1983; Witt & Wright, 1992; Fodness, 1994; Goossens, 2000; Kozak, 2002). Despite the breadth of application of motivation theories in tourism literature, studies about the scope and nature of the motivations of tourists undertaking a geotourism experience are uncommon. Therefore, researchers, students, experts, managers, planners, counsellors, service providers, and tourism marketers

should take this issue seriously. Hence, this study reflects a need to bridge the gap in the geotourism literature and to develop the different dimensions of geotourism studies.

1.3 Research Questions

The purposes of this research are to understand the different motivations behind tourists undertaking a geotourism experience and to investigate the desire of repeat visitation to the geosite. Towards this task, one main research question has been raised:

What are the different types of motivation (intrinsic motivation, extrinsic motivation and amotivation) for tourists undertaking a geotourism experience; and how do these motivations correlate with their desire to revisit the geosite?

Subsidiary research questions:

1. What are the major reasons for the tourist to experience ‘amotivation’?
2. Does the geotourism experience satisfy the three basic psychological needs of the Self-Determination Theory (autonomy, competence, and relatedness) ?
3. Have tourists sought information to plan or prepare for their geotourism experience and, if so, what are the sources of this information?
4. Is the Self-Determination Theory appropriate for investigating tourists’ motivation in a geotourism context?
5. Does the tourists’ motivation differ between two countries in a geotourism context?

According to Richards (2005, p. 12), “ research without purpose is a major practical and ethical problem”. As mentioned in the problem statement, even though a large and growing body of literature has investigated the motivations of different types of tourism, far too little attention has been paid to study the motivations of geosite visitors. This serious lack of knowledge impedes the efforts to develop geotourism and geoconservation. Thus, the main purpose of this research is for the researcher to explore

the motivations of tourists who undertake a tourism experience at a geosite; develop motivational profiles for this new distinctive form of tourism; and investigate how the outcome of this experience leads the tourist to repeat visitation to a geosite. The other subsidiary purposes are as follows:

- To investigate the level of satisfaction of the three basic psychological needs of the self-determination theory in the geotourism experience.
- To investigate the sources of information used by the tourists to plan their trip to the geosite.
- To understand the reasons behind amotivation in the geotourism experience.
- To test the appropriateness of the self-determination theory to investigate the tourists' motivation in the context of geotourism.
- To contribute to the overall understanding of the geotourism experience and develop a new theoretical framework for investigating tourists' motivation.

1.4 Significance of the study

The importance of this study to geotourism is evident in four major aspects. First, it will make a substantial and rational contribution to the geotourism literature.

Second, there are few studies of tourists in a geotourism context. Robinson (2008, p. 11) asserts that, “only very limited research data is available about the needs and wants of geotourists, even amongst those people who know most about geology and geomorphology”. Most dictionaries lack the term ‘geotourism’. Intensive searches on the leading websites engines lead to limited results. This study goes some way towards enhancing our understanding of geotourism and its participants. Moreover, this research also serves as a base for future studies of tourists engaging in geotourism.

Third, the geotourism literature is characterised by many gaps and uncertainties.

Consequently, “the first task in establishing geotourism is to define its framework and outline its physical basis” (Hose, 1996, p. 209). Therefore, this research will apply a new

theoretical framework for studying tourists' motivations in the geotourism experience by using the Self-Determination Theory (SDT) first proposed by Deci and Ryan (1985). The methods used for this research may be applied to other geotourism studies elsewhere in the world.

Finally, this research will illustrate many questions in need of further investigation. One of the most important purposes is to gain an understanding of the nature of geotourism. Hence, this study breaks new ground for research on this topic, and contributes to the overall understanding of why tourists travel to a specific geosite.

1.5 Definitions of terms

This section presents the key terms being used in the study. It is important to note that this research does not use the *National Geographic* (2009) definition of geotourism, which considers geotourism as a geographic based tourism. This research uses the definition of geotourism introduced by Newsome & Dowling (2010) and further explained by Newsome, Dowling & Leung (in press).

Geotourism

“A form of natural area tourism that specifically focuses on geology and landscape. It promotes tourism to geosites and the conservation of geo-diversity and an understanding of earth sciences through appreciation and learning. This is achieved through independent visits to geological features, use of geo-trails and view points, guided tours, geo-activities and patronage of geosite visitor centres” (Newsome & Dowling, 2010, p. 4).

Geopark

“A nationally protected area containing a number of geological heritage sites of particular importance, rarity, or aesthetic appeal. These Earth heritage sites are part of an integrated concept of protection, education, and sustainable development. A Geopark achieves its goals through a three-pronged approach: conservation, education and geotourism” (UNESCO, Global Geoparks Network, 2006).

Geotourist

An individual who visits a site with significant geological or geomorphologic characteristics to view it and to gain knowledge about its features (The researcher, 2009).

Ecotourism

“Responsible travel to natural areas that conserves the environment and improves the well-being of local people” (TIES, 1990).

Sustainable Tourism

“Tourism which is economically viable but does not destroy the resources on which the future of tourism will depend, notably the physical environment and the social fabric of the host community” (Swarbrooke, 1998, p. 13).

Special Interest Tourism (SIT)

“Travel for people who are going somewhere because they have a particular interest that can be pursued in a particular region or at a particular destination” (Bhatia, 2006, p. 126).

Self-Determination Theory (SDT)

SDT is “One of the motivation and personality theories which was developed by Deci and Ryan (1985) at the University of Rochester. It is a large-scale theory of motivations and personality, which is paid full attention to do the action and involve in it with complete sensation of choosing this action. SDT has three types of motivations: intrinsic motivation, extrinsic motivation and amotivation” (University of Rochester, 2008).

Amotivation

“A state lacking of any intention to engage in behaviour” (Markland & Tobin, 2004, p. 191).

Intrinsic motivation

“The doing of an activity for its inherent satisfaction rather than for some separable consequence. When intrinsically motivated, a person is moved to act for the fun or challenge entailed rather than because of external products, pressures or reward” (Ryan & Deci, 2000, pp. 56).

Extrinsic motivation

“A construct that pertains whenever an activity is done in order to attain some separable outcome. Extrinsic motivation thus contrasts with intrinsic motivation, which refers to doing an activity simply for the enjoyment of the activity itself, rather than its instrumental value” (Ryan & Deci, 2000, p. 60).

1.6 Outline of the thesis

This thesis has been divided into six chapters:

Chapter One: Introduction

This chapter describes the background of the research. It provides a general introduction about the world tourism industry and provides a general overview about the different development stages of geotourism. It also discusses the knowledge gap in the geotourism literature. Additionally, it provides the main and subsidiary questions of the research. Finally, this chapter outlines the main purposes and significance of this research.

Chapter Two: Literature Review

This chapter comprises a literature review for the research. It provides an overview of mass tourism and alternative tourism and also includes discussion of geotourism and its development in recent years. The concepts of geotourist, geopark and geosite are also

reviewed. The last chapter assesses the significant theories relating to tourist motivations and addresses their limitations. The self-determination theory has been emphasised.

Chapter Three: Research Design

This chapter outlines the design and methodology of this research. The first and second sections of the chapter review the appropriate research design for this study while the third section discusses the sampling design and data collection. The chapter includes the design of the questionnaire, the sites selected, the method of sample selection, and the statistical data analysis and procedures adopted. Lastly, it provides details about the pilot study, its results and findings.

Chapter Four: The Results of the Study

This chapter presents the findings of this study. It includes tabulation of the results of data collection in the four study areas: Crystal Cave and The Pinnacles in Australia; and Wadi Rum and the Dead Sea in Jordan. Additionally, this chapter provides the results for the demographics, intrinsic motivations, extrinsic motivation and amotivation investigated, as well as the needs satisfaction and behavioural intentions of the respondents in this study. The results provide answers for the main and subsidiary research questions.

Chapter Five: Discussion

This chapter discusses the findings drawn from the analysis of the data. Thus, it discusses the usage of information sources used by tourists before undertaking their various trips to the four geosites. It also explores the intrinsic motivation, extrinsic motivation, amotivation and the need satisfaction of the tourists engaging in geotourism experiences at the four sites. This chapter also investigates the relationship between the tourists' motivations and their behavioural intention to revisit the geosites. The difference and the similarities between the respondents' motivations in Jordan and Australia are also discussed. Finally, this chapter examines the implementation of self-determination theory in the context of geotourism.

Chapter Six: Conclusion

This chapter summarizes the conclusion of the study. It presents the main findings for each objective of this study, and its contribution to existing tourism literature. It also provides implications for future studies and identifies the main limitations of this study.

1.7 Summary

This chapter incorporates the background of the research. It provides a general introduction to the global tourism industry and describes its development throughout the world. The chapter also explains the knowledge gap in the pertinent literature related to geotourism. Further, it introduces the main and subsidiary questions before outlining the essential purposes and significance of this research. Finally, the outlines of the chapters of this thesis are delineated.

CHAPTER TWO - LITERATURE REVIEW

2.0 Introduction

This chapter reviews the pertinent literature on tourism, geotourism and tourist motivation. It includes three main sections. The first section concentrates on providing an overview of mass tourism and the advent of alternative types of tourism and sustainable tourism in the past decades. The second section incorporates the history of geotourism, the key events of geotourism, an overview of geotourism, definitions of geotourism, the relation of geotourism to other forms of tourism, the issue of geotourists, and the geosite and geopark. The final section covers the issue of tourism motivation and reviews the existing theories of motivations in the tourism and leisure literature.

2.1 Overview of tourism

One criticism of much of the literature on tourism is that it lacks a common and precise definition of tourism. Franklin and Crang (2001, p. 7) conclude, “Tourism studies have had a problematic relationship with the process of defining and regulating tourism”. Notwithstanding, several attempts have been made to define the term tourism. One of the most significant contributions to its definition was accomplished by the World Tourism Organization (WTO, 1995, p. 1), “The activities of persons travelling to and staying in a place outside their usual environment for not more than one consecutive year for leisure, business and other purposes”.

Based upon the statistics, it could be claimed that the tourism industry is one of the world’s largest industries, representing a large source of job opportunities in local, regional and global contexts. For example, in 2010 the international tourist receipts were US\$ 919 billion (693 billion Euros) and the total number of the international tourist arrivals had reached 940 million (World Tourism Organization, 2011). The WTO has predicted a tremendous growth in all tourism indicators in its vision for 2020. By global extrapolation, the total number of tourist arrivals will exceed 1.6 billion in 2020 (Figure 2.1).

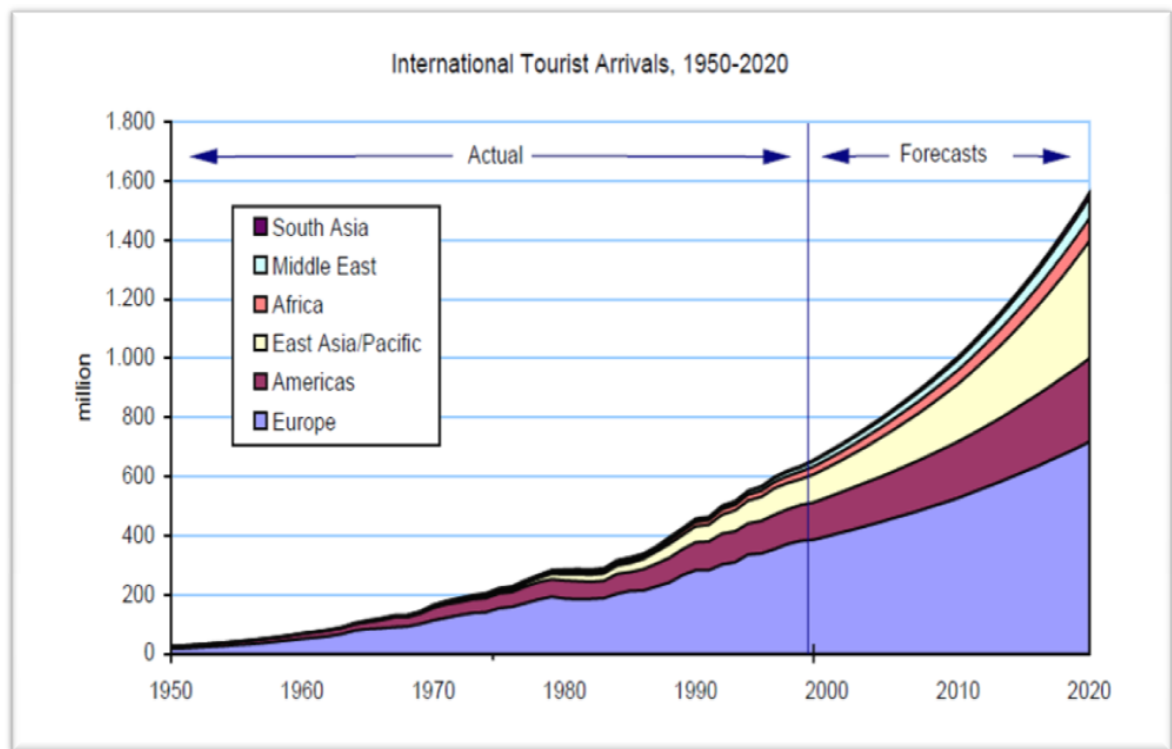


Figure 2.1: WTO forecast of international arrivals 1950-2020 (UNWTO, 2011)

2.2 Mass tourism and alternative tourism

In recent years, there has been an increasing quantity of literature on the disadvantages of mass tourism (Nash, 2007). It has a dark side however, which may lead to dissatisfaction and resentment. The negative effects of mass tourism have led to calls to rethink the rationale of the evolution of mass tourism and the investigation the role of alternative tourism (Smith & Eadington, 1992).

The intensive flow of mass tourists to different types of destinations may have detrimental influence on local societies. One of the worst sufferers of mass tourism is local communities in marginal areas. Numerous tourism studies focus on the different 'socio-economic, ecological, and political' influences of mass tourism on host destinations (Boorstin, 1964; Mathieson & Wall, 1982; Singh, 1989, 2004).

The desire to minimize the negative effects of mass tourism has led to the introduction of the concept of sustainable tourism. Sethi (1999, p. 294) argued that the solution to the negative effects of mass tourism is to shift toward "alternative/ responsible/ sustainable tourism".

Swarbrooke (1998, p. 13), avers the concept of sustainable tourism can be described as, “Tourism which is economically viable but does not destroy the resources on which the future of tourism will depend, notably the physical environment and the social fabric of the host community”.

According to Newsome *et al.* (2002), tourism is twofold: mainstream (mass) or alternative (Figure 2.2). Alternative tourism is depicted as being more responsible, fostering the involvement of local residents in the ‘decision-making process’, including them in tourism growth. It also involves high levels of interaction between the local communities and the tourists as well as the tourists and the local culture and environment. According to Holden (2008), the growth of the alternative tourism is not only related to the enhancement of the environmental awareness for the tourists, but also the feeling of familiarity with mass tourism and the seeking of the novelty to experience new types of tourism and leisure activities.

Bramwell (2004) considers that mass tourism is ‘less sustainable’ than alternative tourism, because it has the more negative effects on the ecosystem. He states that alternative tourism conforms to the principles of sustainability because it involves a small number of people, a high level of appreciation and understanding the environmental effects, and high rate of involvement of the tourists with the local community. Elsewhere Robinson *et al.* (2011) stressed that alternative tourism reflected the existing ideology in the tourism literature, which indicates that an unregulated tourism industry will bring adverse economical, socio – cultural and environmental effects, and costs.

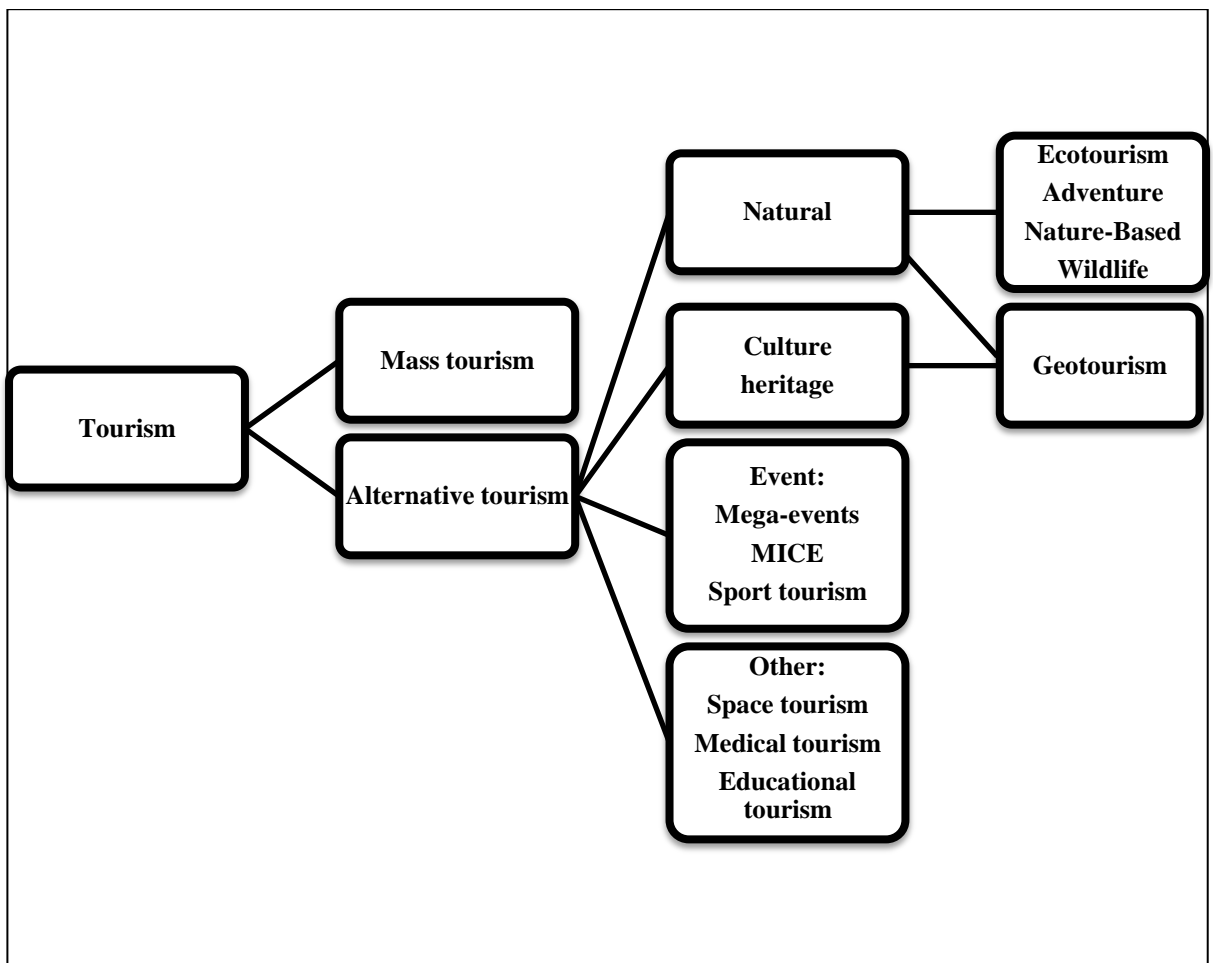


Figure 2.2: Overview of Tourism. Adapted from Newsome, Moore, & Dowling (2002)

2.3 Overview of geotourism

Gray (2004) stressed that there has been a growing market for geotourism activities either independently or as a part of ecotourism activities and this new geotourism growth can be illustrated by four perceptions. First, there has been a high tendency toward an appreciation of the value of wilderness and natural scenery. Thus, a large number of tourists seek holidays in rural and natural landscapes. Second, many popular geological sites have a high aesthetic value which has attracted international and domestic tourists, for example, the Grand Canyon, the Norwegian Fjords and Uluru. Third, there have been many types of local geological activities, which appeal to tourists, such as geological trails, fossil hunting, museums and visitors centers. Fourth, geotourism can include many attractive recreational activities, such as caving, climbing and glacier hiking.

2.3.1 Definition of geotourism

Whilst new concepts have been added to the ecotourism literature in recent years, they have also added a new chaos. These new concepts include pro-poor tourism, geotourism, responsible tourism, and sustainable tourism (Honey, 2008). Geotourism is a new phenomenon, which emerged in the tourism literature during the last two decades, and whose meaning suffered from global consensus (Dowling & Newsome, 2006). Although geotourism has only existed for approximately ten years, it has many definitions. In addition, the origin of the geotourism concept is not clear (Brozinski, 2009). According to Yalgouz-Agaj *et al.* (2010, p. 1342), “Geotourism sites with a spectrum of definitions”. Thus, there are many definitions of the word ‘geotourism’, and the theoretical framework for the study of geotourism has varied accordingly. The two main backgrounds for defining the concept of geotourism lie in the fields of geology and geography.

The first attempt to conceptualize the geotourism definition was introduced by Hose at the beginning of the 1990s, who based his definition on geology and geomorphology (Robinson & Novelli, 2005). Hose has made many revisions to his definition since 1995 (Hose, 2007). As a consequence, Hose (2008, p. 37) defined geotourism as:

The provision of interpretative facilities and services to enable tourists to acquire knowledge and understanding of the geology and geomorphology of a site (including its contribution to the development of the Earth Sciences) beyond the level of mere aesthetic appreciation.

In the light of Hose’s definition, Pralong (2006) argues that, despite the significance of this definition in tourism literature, it does not involve the economic development created by geotourism.

Another definition was introduced by Slomka and Kicinska-Swidorska (2004, P. 6) in Poland. They defined geotourism as being, “an offshoot of cognitive tourism and/or adventure tourism based upon visits to geological objects (geosites) and recognition of geological processes integrated with aesthetic experiences gained by the contact with a geosite”.

Based upon this definition, the concept of geotourism represents the inclusion of tourists' recreation and knowledge gain about the geosite's profile. On-site geological objects can enhance the sense of the aesthetic value of a geosite (Slomka & Mayer, 2010, p. 142).

Dowling and Newsome (2006, p. 3) suggested another definition of geotourism, which is also based mainly on geology and geomorphology, "The 'geo' part pertains to geology and geomorphology and the natural resources of landscape, landforms, fossil beds, rocks and minerals, with an emphasis on appreciating the processes that are creating and created such features".

This definition is significant because it has linked geotourism to tourism of the natural area. As a result, this definition has introduced geotourism as a stand-alone extension or branch of the tourism industry. Most importantly, it pins down geotourism as a specific and concise concept. Dowling and Newsome (2006, p. 4) stressed that, "we thus posit that geotourism is a distinct subsector of natural area tourism".

After the rise of interest in geotourism in European countries, a new definition emerged from Europe. Reynard (2008, p. 225), from the University of Lausanne in Switzerland, states that geotourism may be defined as, "A combination of tourist goods, services, and infrastructures developed in a specific area in order to promote its geological and geomorphic heritage (archaeology, ecology, history etc.)".

This definition has emerged through intensive discussion with members of the International Association of Geomorphologists (IAG) working group on geomorphosites. This definition appears as a common approach to explain the concept of geotourism more than an in-depth attempt to adjust and generalize the term of geotourism. However, Reynard's (2008) definition can be summarized by two points: first, it involves the traditional supply of mass tourism, such as, goods, services, and infrastructure; and second, it is a promotion of geological and geomorphologic features. As a result, it lacks knowledge and understanding of the purpose of geotourism (Hose, 1995), and an appreciation of the total process (Dowling & Newsome, 2006), the educational purpose not being available in Reynard's definition.

Interestingly, the concept of geotourism is different in the United States of America, which bases its definition on 'geographical' features (Figure 2.3). In the light of this different

geotourism concept, a study by The Travel Industry Association of America (TIA) and The Research Department of the

Travel Industry Association of America (sponsored by National Geographic) (2002) investigated travellers' environmental and cultural attitudes and behaviours. This study, *Geotourism – The New Trend in Travel*, administered a questionnaire to assess tourists' attitudes toward a geotourism experience. The results obtained from this questionnaire indicated that there were more than 55.1 million people who could be considered as 'sustainable tourists' or 'Geotourists' in the USA. Three groups of tourists were identified as being in the highest segments of geotourism (TIA, 2002):

- Geo-savvys (16.3 million travellers): the main characteristics of this group were “young, well-educated, and environmentally aware travellers”.
- Urban sophisticates (21.2 million travellers): they were “the most affluent travellers with strong preferences for the cultural and social aspects of travel”.
- Good citizens (17.6 million travellers): the main features of those in this segment were “older, less sophisticated, and socially-conscious travellers”.

In the light of the above discussion, the common factor of the three groups was a geotourism tendency (Travel Industry Association of America, 2002). Nonetheless, based on this large-scale study the concept of geotourism and its participants is neither specific nor accurate. The study introduced geotourism as a segment or niche of ecotourism or cultural tourism. This study showed the geotourist as a sustainable tourist or an ecotourist who has high awareness of the ecological and cultural features of the sites. According to Smith *et al.*, (2009, p. 88), this form of geotourism is “just a fusion or repackaging of existing concepts (sustainable tourism, ecotourism and cultural tourism)”.

The TIA suggested that Jonathan Tourtellot, head of The Tourism Institute at the National Geographic Society had created the geotourism concept. Tourtellot defines geotourism as, “Tourism that sustains or enhances the geographical character of the place being visited, including its environment, culture, aesthetics, heritage and the well-being of its residents (Stokes, Cook, & Drew, 2003, p. 1)

The National Geographic definition is broad in content and scope. It is a mix of geotourism, ecotourism, sustainable tourism, and geographic tourism. Moreover, this definition lacks any direct or indirect indication of the geological and geomorphic features. Therefore, this definition creates a clear dilemma because it broadens and maximizes the concept of geotourism to multidimensional activities. Following this, on the website of the National Geographic (2009), this comment follows as the definition of geotourism:

Geotourism incorporates the concept of sustainable tourism (the first dimension) — that destinations should remain unspoiled for future generations — while allowing ways to protect a place's character. Geotourism also takes a principle from its ecotourism cousin (Another dimension), — that tourism revenue should promote conservation — and extends it to culture and history as well, that is, all distinctive assets of a place.

The wide scope of the National Geographic concept of geotourism influences the mechanisms and scope of geotourism marketing and promotion. However, it declares the Geotourism Charter, which is a “statement of principles established to protect and promote authentic sense of place” (National Geographic, 2009). Notably, the charter covers many aspects of geotourism, ecotourism, and sustainable tourism, but it may not be considered as a solely ‘geotourism’ charter. It represents a guideline for sustainable tourism or ecotourism criteria more than a pure geotourism charter. The Eighth World Wilderness Congress adopts geotourism (according to the National Geographic concept) and three countries signed the geotourism charter: Honduras, Norway, and Romania .

A recent study by Newsome and Dowling (2010, p. 231-2) has included two important issues. The first is that the authors assert geotourism to be a purely geological phenomenon, stating, “We do not support the view of National Geographic that geotourism is more ‘geographic’ tourism”. Second, they introduce a new holistic definition of geotourism, which abolishes the haziness of previous definitions of the geotourism concept. Moreover, the authors hope that this definition will be more “generally accepted”, concluding,

Geotourism is a form of natural area tourism that specifically focuses on geology and landscape. It promotes tourism to geosites and the conservation of geo-diversity

and an understanding of earth sciences through appreciation and learning. This is achieved through independent visits to geological features, use of geo-trails and view points, guided tours, geo-activities and patronage of geosite visitor centres.

As a result, this definition bridges the gap in the geotourism literature and provides recognition for the significance of the geological heritage. As such it confronts an international ignorance that has existed for a long time. According to UNESCO (2008, p. 2), geology and landscape have shaped the life and influenced communities, civilization and culture, but there is “no international recognition of geological heritage sites of national or regional importance, and no international convention specifically on geological heritage have existed”.

Interestingly, Bertolini *et al.* (cited in Ostaficzuk, 2005, p. 119) have argued that in order to eliminate the confusion of the geotourism definitions, it is reasonable to follow the geological sense and also use the concept of ‘tourism geology’ or ‘geology and tourism’ which was created by Komoo in 1997.

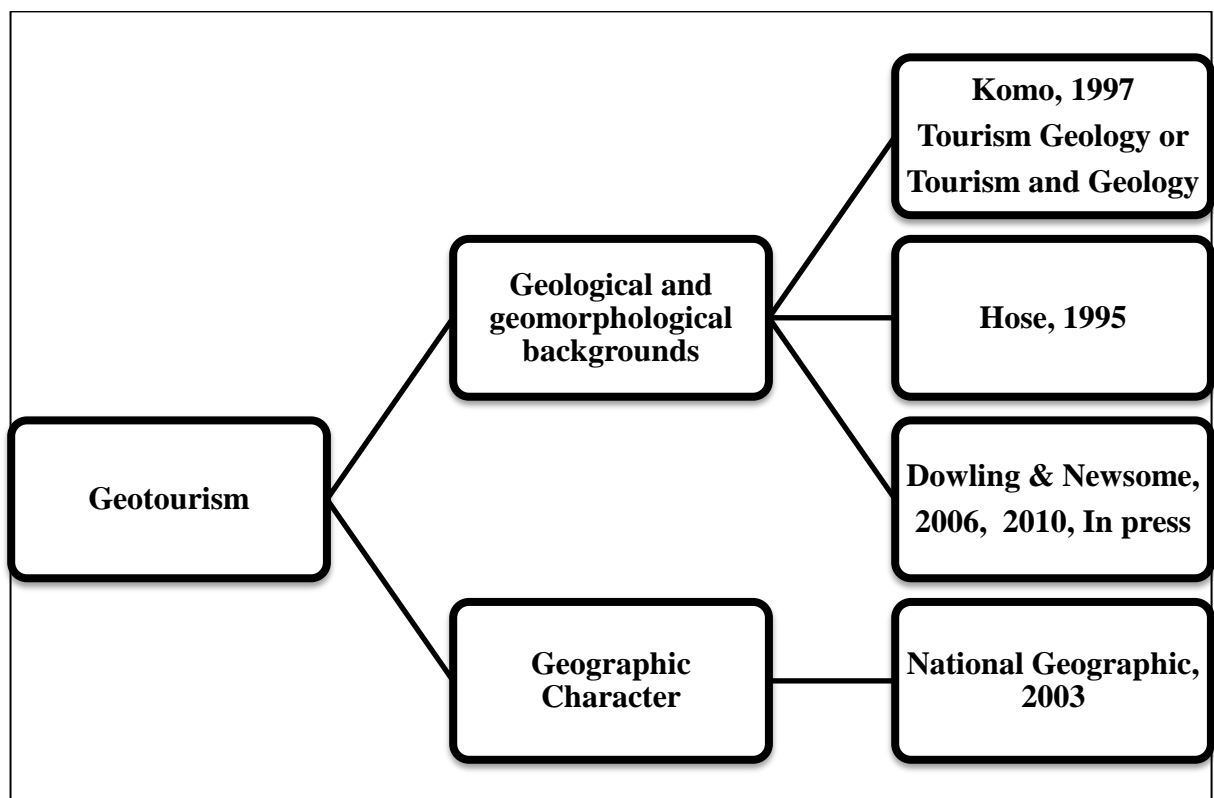


Figure 2.3: The different definitions of geotourism

Summarizing, geotourism is a relatively new conceptual area in the tourism literature. Its conceptual frameworks are not yet fully developed. By reviewing the literature on geotourism to date, the researcher concludes that there is no agreement on the concept's definition. The tourism literature has two general approaches to the concept of geotourism. First, some arguments (Hose, 1995; Dowling & Newsome, 2006) contend that geotourism is a reflection of the real value of the geological and geomorphic features. Second, others assert that geotourism has a purely geographic theme (Stueve, 2002; The Travel Industry of America and National Geographic Traveler Magazine, 2002). This approach is common in the United States of America. Therefore, the geotourism literature requires development from precise background research, for both the theoretical and practical levels .

Interestingly, Brozinski (2009, p.7) postulates that a lack of an exact definition of geotourism brings many unforeseen arguments. Some arguments are introduced in an expected way, while others originate with creative derivations. For example, the Geotourism Canada website introduces geotourism as a type of geocaching¹.

2.3.2 The relationships of geotourism with other forms of tourism

A lack of a consensual definition of geotourism has mingled the scope of geotourism activities with other tourism, such as, sustainable tourism or ecotourism. Pralong postulates that, “geotourism may be understood in relation to natural and cultural tourism”; while Dowling and Newsome (2006, p. 6) propose that geotourism is a section of “natural area tourism and ecotourism”. Most importantly, the geological sense is clearly present in the Dowling and Newsome framework. They state that geotourism is “a specialized form of tourism in that the focus of attention is the geosite” (p. 6). In addition, the geological and geomorphologic aspects, such as volcanic landforms, glacial features and fluvial landscapes, appear clearly in Dowling and Newsome's framework (Figure 2.4).

According to this framework, the scope of geotourism is, to some extent clear and confined. On the one hand, the cornerstones of geotourism are geological and geomorphic features, without neglecting the importance of infrastructure, superstructure, interpretation, planning,

¹A form of treasure hunt using the Global Positioning System (GPS) to locate the cache (Word web Dictionary, 2010)

and management because geotourism is not only a geological phenomenon; it is also about tourism facilities and services, tourism management, geological attractions, vital and efficient interpretation, flexible planning and bundle of interesting activities. On the other hand, geotourism is also the major and distinct ‘umbrella’ for all the activities and processes that occur at a geosite.

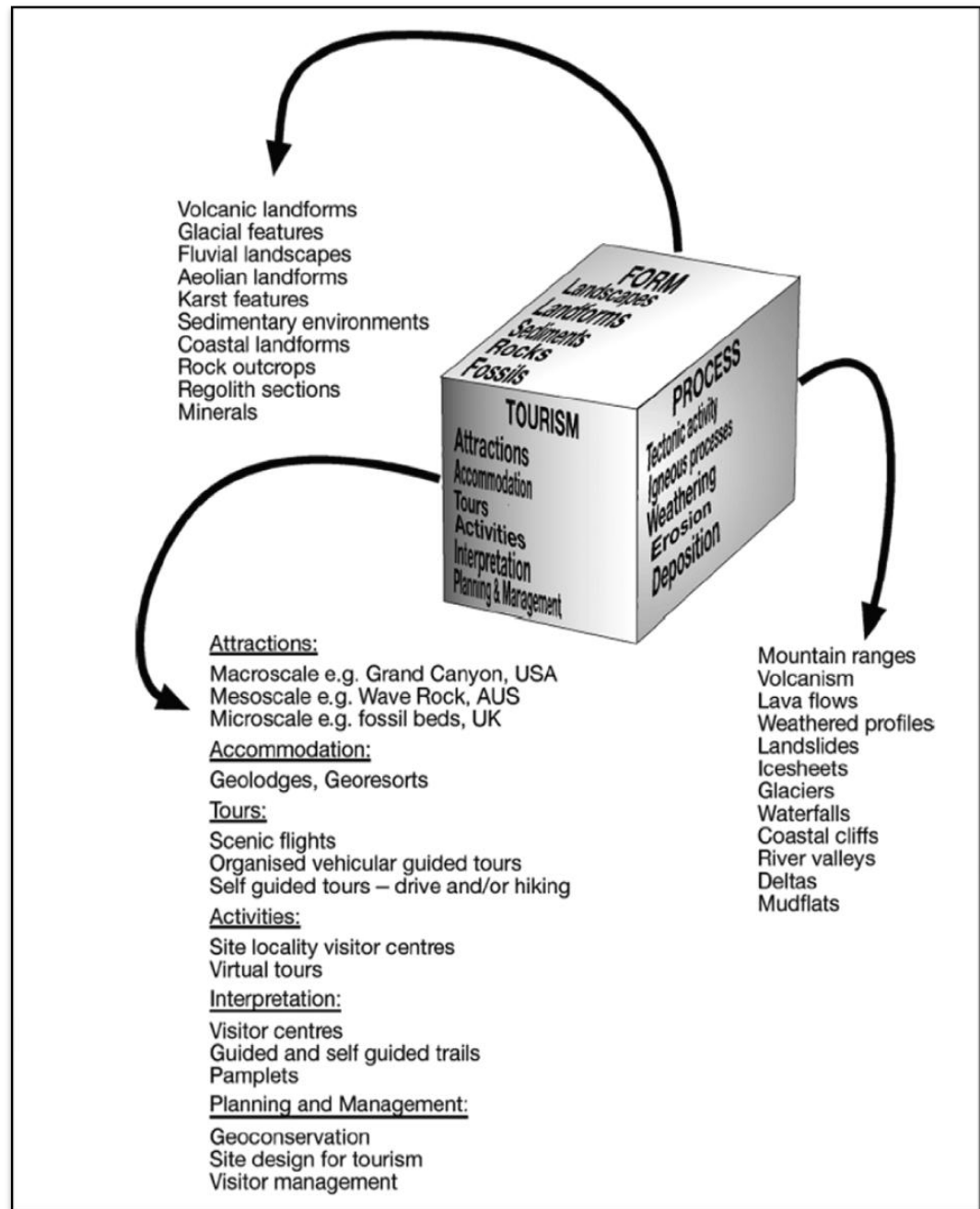


Figure 2.4: Dowling and Newsome (2006, p. 5) framework of nature and scope of geotourism

Hose (2005, p. 28) contends that geotourism has “some overlap with ecotourism, sustainable tourism and alternative tourism and potentially much overlap with educational travel, and environmental, nature based and heritage tourism”. Hose’s concept of geotourism intersects with other tourism forms. Consequently, his argument accentuates the splits in the fragmented nature of geotourism. He deepens the scope of geotourism to be multidimensional phenomena, which belongs to the other sections of tourism industry. Newsome and Dowling (2010) argued for the significance of compiling an explicit definition of geotourism in a concise and exact way. They stated that any precise definition would contribute in establishing a specific and focused knowledge about geotourism. In addition, most of the natural tourism attractions in the world are basically geological features.

Buckley (2009) argues that geotourism is one of the related terms for ecotourism (Table 2.1), his concept includes two aspects. First, he takes into account Dowling and Newsome’s (2006) definition and according to him, this definition is ‘little-used’; second, Buckley (2009) states that the American concept of geotourism is “not taken up widely” and there is “confusion over meaning”. In other words, this definition is too broad, because it is mixed up with the different forms of the tourism industry. It also leads to a sort of hybridization and fuzziness for the geotourism concept.

Table 2.1: Different Terms of Ecotourism

Term	Meaning
Green tourism	An early term essentially synonymous with ecotourism, but never very well defined.
Alternative tourism	A term used in the academic tourism literature to draw a distinction from mainstream or mass tourism; effectively, therefore, it means any kind of tourism with a small or specialist market, or any product that can not normally be booked through a mainstream travel agent.
Endemic tourism	A little-used phrase, derived from a term used in biology, and intended to indicate any type of tourism product where the primary attraction occurs only in a particular localized area.
Geotourism (geological version)	Tourism where the primary attraction is a geological feature, including spectacular scenery (Dowling and Newsome, 2006); little-used
Geotourism (geographic version)	Usage proposed by National Geographic closely similar to ecotourism, not taken up widely, confusion over meaning
Responsible tourism	Little-used term, presumably derived by analogy with the “Responsible care initiative by the chemical industry; focus on social consideration
Sustainable tourism	Heavily used but poorly term defined, indicated tourism that complies with the principles of sustainable development which is itself a very vague and much contested expression; refers broadly to environmental management in the mainstream tourism industry, not restricted to ecotourism; adopted in the UNWTO tour operators initiative for sustainable tourism .

Source: Adapted from Buckley (2009, p. 5)

Correspondingly, Joyce (2006, p.1) argues that geotourism is a, “subset of geology and tourism,” and that, “It can be seen as an extension of tourism generally, and a part of ecotourism in particular”.

Dowling and Newsome (2010) argued that despite the similarities between the characteristics of ecotourism and geotourism, there have been two obvious divergences. First, geotourism focuses largely on the geological and geomorphic aspects of the earth and their formations, while ecotourism has concentrated on the major characteristics of living organisms of the environment such as, different categories of flora and fauna. Second, there is a major difference between geotourism and ecotourism in the location of the occurrence. Whereas ecotourism can usually occur in “natural areas”, geotourism activities can occur in

any environment, which has geological and geomorphic characteristics. As a result, geotourism can occur in either the natural or the built areas. Dowling and Newsome (2010) give geotourism independent identity and introduce it as a stand-alone form of tourism. Their contribution in establishing an independent background for geotourism is considered to be the first essay in the geotourism literature. They put geotourism in a distinctive frame and moved it from under the umbrella of ecotourism. Following this, Farsani *et al.* (2010, p.69) postulated the Dowling and Newsome definition to be considered as the current definition of geotourism involving as it does ‘the wider aspects of tourist activity’.

2.3.3 Mass tourist or geotourist: a question of definition?

The evaluation of tourism requires an exact and common definition of its concepts. Although, there have been significant advancements in the past decades, the general state of tourism’s terms and definitions including that of tourists, is one of fuzziness and contradiction (Murphy, 2004). This view is supported by McCabe (2005, p. 85) who writes:

Although greater understanding of the tourist has been identified as one of the principal research issues for tourism research, the focus is on types and forms of touristic experience rather than uses of the concept of ‘tourist’ as a lay category, thereby taking for granted its function within a wider cultural discourse of holidaymaking and travelling.

There is a clear lack of studies in the tourism literature about geotourists. Very few studies have investigated these important issues in the geotourism context:

- Who is a geotourist?
- Why do geotourists travel to a specific geosite?
- What activities do they prefer?
- What do they need or want?
- Are geotourists mass tourists?

In the light of this discussion, the characteristics of geotourists will be associated with the nature and scope of geotourism. Thus, geotourists can be categorized as special interest tourists according to the classification of geotourism as “special interest tourism” (Hose, 1995); or a “specialized form of tourism” (Dowling & Newsome, 2006). Read (1980, p. 195) defines Special Interest Tourism (SIT) as, “Travel for people who are going somewhere because they have a particular interest that can be pursued in a particular region or at a particular destination”.

Some arguments state that special interest tourism has arisen from the disjunction between new types of tourism that endeavour to satisfy the requirements of tourists and residents (Trauer, 2006). Hose (2008) argues there are two main categories of geotourist groups. First, the educational group consisting of students of all educational stages “from pre-school to postgraduate” who take over geological studies or other related studies; and “dedicated geotourism provision”. Second, the recreational group includes different types of recreational people from the beginner to the expert. There are individuals or groups who intend to watch the different geological and geomorphic attractions at a geosite or a geopark.

Likewise, Dowling and Newsome (2006, p. 4) emphasize the educational purpose of geotourism, which includes the “sense of wonder, appreciation and learning”. Furthermore, Robinson (2008, p. 2) describes the role of geotourism in geotourist learning as extra information “doubling the value of a tour.” This view is supported by Farsani *et al.*, (2010, p. 68) who write, “At present, geotourism is a new movement helping travellers to increase their knowledge about natural resources, the cultural identity of hosts and ways of preserving them”.

In a small-scale study, Joyce (2006) defines geotourists in several ways. These include:

- The normal visitor who is interested in one or more parts of geology.
- The devoted inexpert (and experts) of geology and landforms.
- Different types of student groups.
- Academic staff who participate in conferences and trips.

- Pubescent academic classes, merchant “ecotour” and “geotour” entrants.
- Landscape photographer, “artists, historians, etc”. (Joyce 2006)

In light of the above discussion, geotourists can be categorized into three groups: academics, geologists, and geology devotees. Although Joyce (2006) provides full details about the nature of geotourists, this classification was not supported by any empirical evidence.

Yalgouz-Aga *et al.* (2010) assert that the type of tourists who are visiting geotourism sites are different from other types of tourists because geotourism has distinctive characteristics which are distinct from other forms of tourism. For example, Geotourism relies on scientific, educational, and historical values, geotourism appeal, international importance, social and cultural structure, biodiversity, and appearance.

Elsewhere, Newsome, Dowling, & Leung (In Press) claim that geotourists may include both independent individuals and group visiting geological tourism sites. In addition, they may travel to geological attractions in either ‘natural areas’ or ‘urban/built areas’.

Finally, to date, the geotourism literature does not provide a common definition of a geotourist. A reasonable approach to tackle this issue would be to introduce a new definition, which is based mainly on a consensus derived from the literature. This definition of a geotourist so derived might well be, “An individual who visits a site with significant geological or geomorphic characteristics to view it and gain knowledge about its features”.

This definition combines the enjoyment of a site’s beauty, which arouses a sense of wonder whilst gaining knowledge about the intrinsic value of the geosite (Figure 2.5). Therefore, a geotourist can have a holistic experience, which distinguishes and recognizes the quality of, a geotourism experience from other forms of tourism.

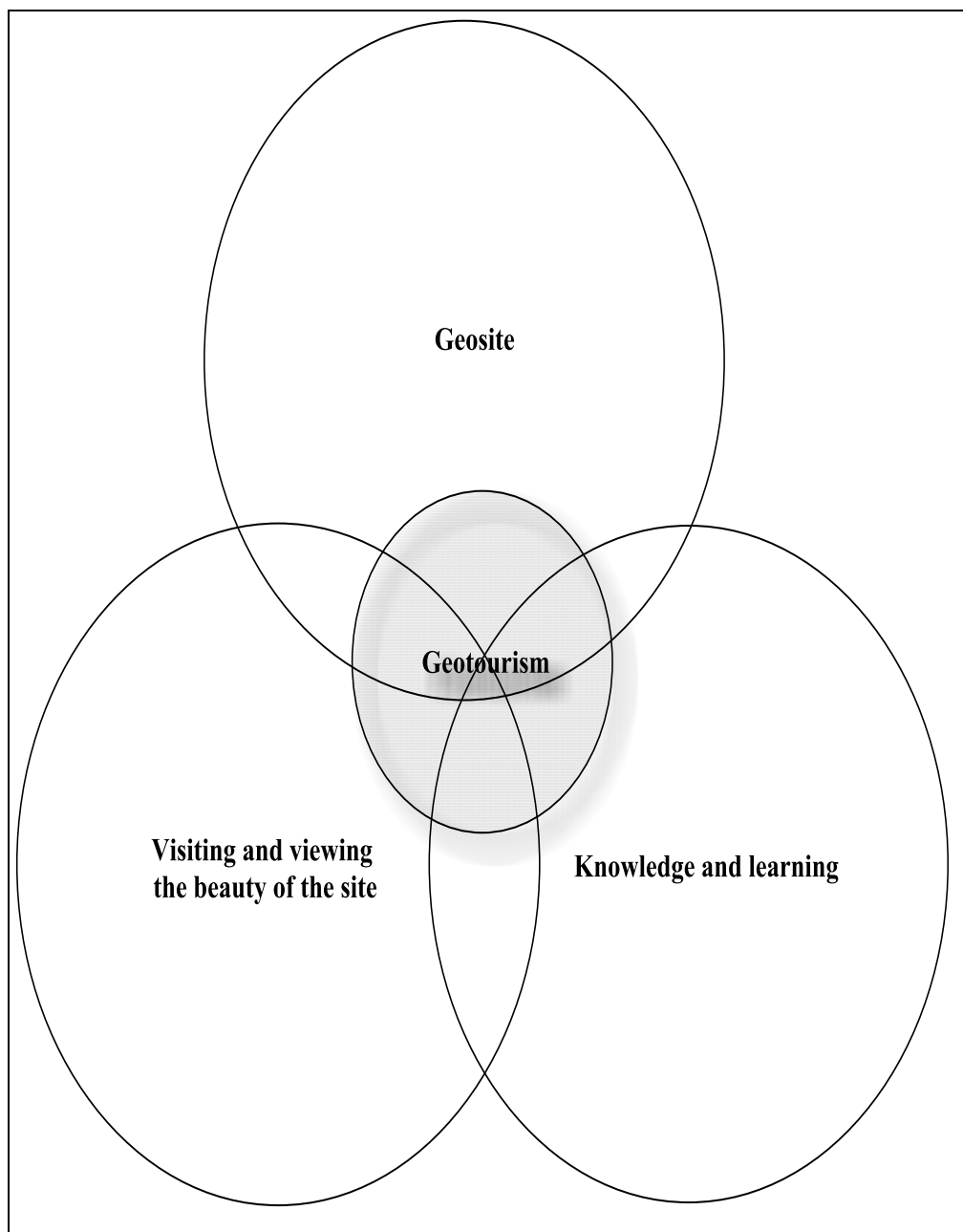


Figure 2.5: The main goals of visiting a geosite

2.3.4 The geosite and geopark

Brozinski (2009) advises that to counteract the lack of attractiveness of rocks, consideration must be given to provide a holistic and attractive experience for tourists, and to produce a full story about the formation of landscapes in geosites to help the grasping of its importance and developing a sense of 'awe'. El Wartiti *et al.* (2008, p. 415), define a geosite as:

A site or an 'area', a few square meters to several square kilometres in size, with geological and scientific significance, whose geological characteristics (mineral, structural, geomorphic and physiographic) meet one or several criteria for classifying it as outstanding (valuable, rare, vulnerable, endangered).

Taking into account the importance of integrating the internet and other modern technologies with geotourism, a recent study was conducted at the Titel Loess Plateau in Serbia by Vasiljević *et al.* (2009) showing that the appropriate usage of dynamic maps on websites not only enhanced the attractiveness of the potential geosite to nature fans and scientists, but also increased the public's knowledge of geotourism destinations.

UNESCO has contributed to the establishment of standards for the foundation of a list of geoparks in the world. The initial discussion on the geopark and geosite was started in 1996; thus, UNESCO and the International Union of Geological Sciences (IUGS) launched the concept of a geosite in that year. These two organizations established the programs "Geosite and Geopark" in order to progress their development in rural and regional contexts (Tapiador, 2007). The difference between a geosite and geopark is that a geosite is "a small-sized place of geological heritage," whereas a geopark is a large-scale place that may contain other types of attraction and heritages, such as the archaeological, ecological, historical and cultural (Tapiador, 2007).

Farsani *et al.* (2010) argued that the foundation of a geopark is not only crucial for improving the different activities of geotourism, but also it can enhance the local economy by providing and increasing the chances of work for the local community, developing the

different sorts of productions of the local groups, and supporting the income sources for an area's adjacent geoparks.

UNESCO's Global Geoparks Network (2006) has defined a geopark as:

A nationally protected area containing a number of geological heritage sites of particular importance, rarity, or aesthetic appeal. These Earth heritage sites are part of an integrated concept of protection, education, and sustainable development. A Geopark achieves its goals through a three-pronged approach: conservation, education and geotourism.

However, IUCN, Biosphere Reserves, World Heritage Sites, Ramsar Wetlands and Marine Reserves are the five international designations for protected areas (Prato & Fagre, 2005). According to the International Union for Conservation of Nature (IUCN) a protected area can be defined as "Geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long term conservation of nature with associated ecosystem services and cultural values (IUCN, 2011).

UNESCO has also established the criteria for a geopark, which can be a member of the Global Network of National Geoparks. These criteria include six requirements as follows (UNESCO, 2008):

1. Size and setting: according to UNESCO criteria, the main requirement of the size and setting for a geopark membership includes a region with "well-defined limits" and adequate space area, which can serve the different activities of the local economy and "cultural development (mainly through tourism)". However, the values of geopark are not only based on the geological features, but also the ecological, archaeological, historical and cultural significance.
2. Management and local involvement: the success of the geopark is based on the effective management of the site, the qualified human resources and sufficient financial sources. Furthermore, involvement of the local community adjacent to the geopark in tourism development plays a vital role in the success of its management. The partnership of, and the cooperation among, all stakeholders in the geopark can

enhance the efforts of its development and generate more chances for the success of the geopark management.

3. Economic development: one of the major purposes of establishing a geopark is improving the economic development in an area and contributing to the sustainable development within this area. Geotourism development is an amalgam of geological conservation, economical activities and supporting financial resources of the local community. Thus, “Geotourism is an economic, success-oriented and fast-moving discipline, a new tourist business sector involving strong multidisciplinary cooperation”.
4. Education: the educational purposes of a geopark are essential. Therefore, geopark offers many tools to raise awareness about the importance of the geological heritage and environmental knowledge of the communities. As result, museums, educational centres, trails, guided tours, popular materials and maps, and different types of communication media can enhance the knowledge about geoscientifics. Moreover, geopark activities can also improve scientific research.
5. Protection and conservation: a geopark is an essential means to protect its special geological features. There is a concord between geopark activities and the local regulations and legislations. However, a geopark can support the different activities of conservation of its geological features, for example, “representative rocks, mineral resources, minerals, fossils, landforms and landscapes”.
6. The Global Network: this represents a vital tool to connect the experts, researchers and practitioners in the diverse geological fields. UNESCO plays a major role in supporting this cooperation and partnership between the community and personnel involved in the geopark activities.

Whilst UNESCO established the basics of the Geopark movement in 1999, the concept of geoparks was developed directly after the foundation of both the European Geoparks Networks (EGN) and the Chinese National Geoparks Network in 2000. Other countries, such as Australia, Brazil, Iran, Malaysia and Vietnam, started to develop geopark programs after the foundation of the Global Network of National Geoparks in 2004. In Europe, the number of geoparks increased rapidly, fifteen European countries joining the European

Geoparks Networks in 2007 (Burek & Prosser, 2008). Currently, the list of the European Geoparks Network includes 49 Geoparks in 19 European countries . As a result, the UNESCO list includes 63 global geoparks in 2009. China had the largest allotment of geoparks with 22. Furthermore, the list of Global Network of National Geoparks has increased to 87 geoparks in 27 member states in Europe, Asia, Australia and South America (UNESCO, 2011) (Appendix I). The recent list of members includes: Australia, Austria, Brazil, Canada, China, Croatia, Czech Republic, Finland, France, Germany, Greece, Hungary – Slovakia, Iceland, Iran, Italy, Japan, South Korea, Malaysia, Norway, Poland, Portugal, Ireland, Republic of North Ireland, Rumania, Spain, United Kingdom, Vietnam (GGN, 2011).

Despite the significance of the UNESCO geopark list, it has provoked some confusion with the World Heritage List, which incorporates “properties forming part of the cultural and natural heritage which the World Heritage Committee considers as having outstanding universal value” (UNESCO, 2011). Gray (2004, p. 193) argued that it is improper to consider this list as a “mainstream UNESCO project”, rather it is a rational expansion of the World Heritage List. Marinos (2001) considers that the scope of the World Heritage List is too narrow for some exceptional geological sites. The different aspects of the geological heritage and earth science exceed the capacity for the World Heritage list. It is also appropriate to found ‘a World Network of Geosites/Geoparks’. Dowling and Newsome (2006, p. 113) stress that the contribution of UNESCO in the park movement is essential to increasing “public awareness for geological heritage issues.” Thereby it also supports global recognition of geotourism and is having an efficient political effect.

2.4 Tourist motivation

It is almost axiomatic that the reason why people travel to a specific site is vital to people involved in tourism. What motivates people taking part in different types of behaviour has occupied researchers and scholars long before it was investigated in the tourism domain (Page & Connell, 2006). However, a considerable amount of literature has been published on tourist motivation in recent decades and it is ubiquitous in tourism studies (Singh, 2008). The concept of tourist motivation does not stem from core of tourism literature; it is adopted from other sciences such as psychology and social science. On the other hand,

tourist motivation is a 'hybrid concept' (Pearce & Butler, 1994, p. 113), being subject to tourist motivation theories which are peculiar and an amalgam of the other contributions from the neighbouring sciences. To date the literature shows no agreement on which theoretical approach to use when investigating the motivations of tourists (Holden, 2005).

The mission of tourist behaviour theories is to present the prosperous areas of tourist needs, as a source of data for researchers to use in their particular investigations of "satisfaction, decision making and marketing" (Pearce & Butler, 1994, p. 116)

The discussion sheds light on people's motivations in their home-base context and their cultural conditioning. It is apparent that the researchers engage in two rational missions. First, recognition of the domestic environment and its affect upon the potential tourist. Thus, the researchers should remark on the diverse needs and pressures, which influence the potential travellers toward making their journey. Second, the researchers must investigate the following journey itinerary and the destination in terms of the potential tourist's reaction to such home-base needs and pressures (Williams, 2004, p. 59). Therefore, a portion of what a theory of motivation attempts to realize is to clarify and forecast "who has which motivations". For that reason, numerous theories of motivations have been suggested (Kozak & Decrop, 2009). Furthermore, there are two approaches to applying the motivation theories: content theories and process theories. Content theories investigate "what the human needs are and how these needs change over time" (Maslow, 1943; McClelland, 1988). Process theories try to describe "the mechanisms by which human needs are formed and could change" (Locke and Latham, 1990; Vroom, 1964). In the tourism context, Pearce (1988), Crompton (1979) and Iso-Ahola (1982) are examples of content theories according to Kozak & Decrop (2009).

Last but not least, the fundamental purposes of reviewing the literature on tourist motivation theories are twofold. First, by scanning the literature of tourist motivations fruitlessly to find an appropriate theory to apply when investigating the tourist motivations in the geotourism context. Second, because there is no exact motivation theory for evaluating tourist motivations, this study will develop a new framework based on the literature review.

2.4.1 Overview of theories of motivation

The theories of tourist motivation are not separated from the other sciences, such as psychology and sociology. In general, the tourist motivation literature exposes four major categories. They are Needs-Based, Values-Based, Benefits Sought or Realised, and Expectancy Theory-Based. Kay (2003) informs the researcher that each of these groups is founded on other theories of consumer behaviour (Table 2.2).

Table 2.2: Summary of Tourism Motivation Studies Based on Consumer Motivation Literature

N.	Approach	Tourist motivation	Consumer motivation
1	Need-based	(Pearce & Caltabiano 1983)	(Maslow 1943) (Murray 1938) (McClelland 1955, 1965)
2	Value-based	(Madrigal 1995) (Skidmore & Pyszka 1987)	(Rokeach 1968, 1973) (Mitchell 1983) (Kahle & Kennedy 1989)
3	Benefits Sought or Realised	(Pearce & Caltabiano 1983) (Driver, Brown, & Peterson 1991) (Frochot & Morrison 2000)	(Haley 1968)
4	Expectancy Theory-Based	(Witt & Wright 1992)	(Vroom 1964) (Deci 1985)

Source: Adapted from Kay (2003, p. 603-604)

2.4.1.1 Maslow's needs hierarchy (1943, 1954)

A large body of literature has investigated tourist motivation based on Maslow's (1943, 1954) needs theory which has been termed the hierarchy of human needs theory (Figure 2.6). Maslow postulated his five-level hierarchy, consisting of "physiological, safety, love, esteem and self-actualization needs" in 1943. He also added another group of needs in 1954; "the need to know and understand, and aesthetic needs" (Glenn, 1998, p. 20). In addition, he sets the physiological human needs such as drink, food and sleep at the base of the needs hierarchy. The next needs group from the base of the hierarchy includes safety and security needs such as needs of protection and lack of fear. He further locates the needs for liking and familiarity in the middle of the hierarchy. The next level up is the need for

esteem, which consists of two another types of needs: the need for “admiration and respect” and “the need to regard to oneself as competent and successful.” At the pinnacle of the hierarchy, he places the need for “self-actualization or fulfilling one’s potential” (Maslow cited in Eysenck, 2004, p. 66).

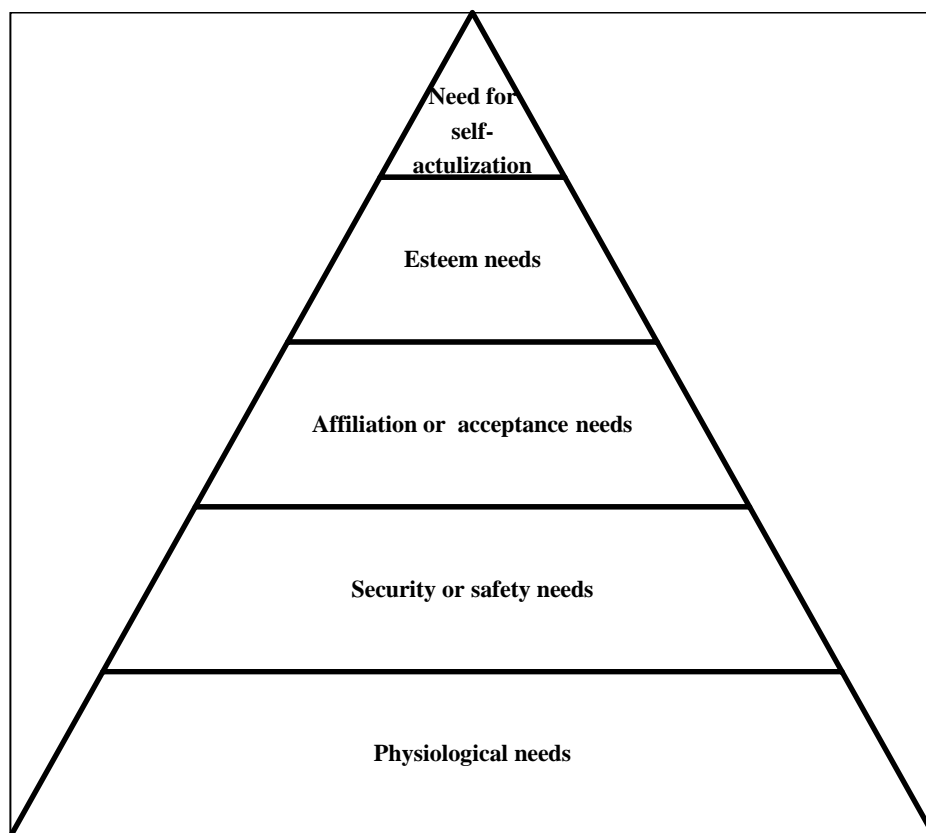


Figure 2.6: Maslow's Hierarchy of Needs. Adapted from (Koont & Weihrich, 2006, p. 290)

Even though this theory was established in the clinical psychology field, it was utilized mainly in different types of social sciences and other fields such as marketing, business and tourism as an appropriate general theory of motivation (Kay, 2003).

One main criticism of Maslow’s hierarchy is that it is one-sided theory only focusing on human needs. Following this, it is a partial theory and it is only focusing on one specific side of motivation (Witt & Wright, 1992). Therefore, it is increasingly difficult to pay full attention to human needs and ignoring the other sides of human behaviour because

“knowledge of people’s needs will not necessarily tell us what they will actually do to fulfil such needs, or indeed whether they will do anything at all” (Witt & Wright, 1992, p. 44). Another drawback with this theory is that people can live normally even though they cannot satisfy their needs. For instance, soldiers fight and perform their missions regardless of the lack of safety; poor and hungry boys can also play and be happy. Therefore, Maslow’s theory is not adequate for dealing with all the facts (Ventegodt, Joav & Jorgen, 2003).

2.4.1.2 Murrays’ needs and environmental presses

Murray (1938) suggested that motivation comprises the core of personality theory, that is, “people are motivated by the desire to satisfy tension-provoking drives (called needs)”. He also considered needs as a power in the “brain region” which provokes and classifies the different types of “perceptions, thoughts and actions” (Furnham, 2005, p. 289). In his book *Personality*, Murray claimed there to be thirty needs that are common among people; these increase the goal to achieve the behaviour. Elsewhere, Murray has argued that some needs are provoked by the particular characteristics of the environment, which he called “environmental presses” (Irvine & Newstead, 1987, p. 422).

Perhaps the most serious disadvantage of Murray’s approach is that it is an intensive time consumer, lacking “readability and validity” (Dorfman & Hersen, 2001, p. 110). However, approaches of this kind carry with them a clear limitation because they are only based on needs.

2.4.1.3 Pearce’s Travel Career Ladder (TCL)

TCL is one of the tourist motivation theories promulgated in the tourism literature. It has been apparent that this approach was affected by Maslow’s needs-hierarchy theory of motivation. It was formulated in three stages by Pearce (1988, 1991b, 1993b), Pearce & Caltabiano (1983) and Moscardo & Pearce (1986a). According to Pearce (2005, p. 52) the TCL was founded on “five different levels: relaxation, needs, safety/security needs, relationship needs, self-esteem and development needs, and self actualisation/fulfilment needs” (Figure 2.7). Ivanovic (2009, p. 271) identifies the significant advantages of TCL which covers a wide range of motives; provides a broad scope of needs in every step of the

ladder; and takes into account that the destination is a new experience which reflects tourists' different types of lifestyle and personality.

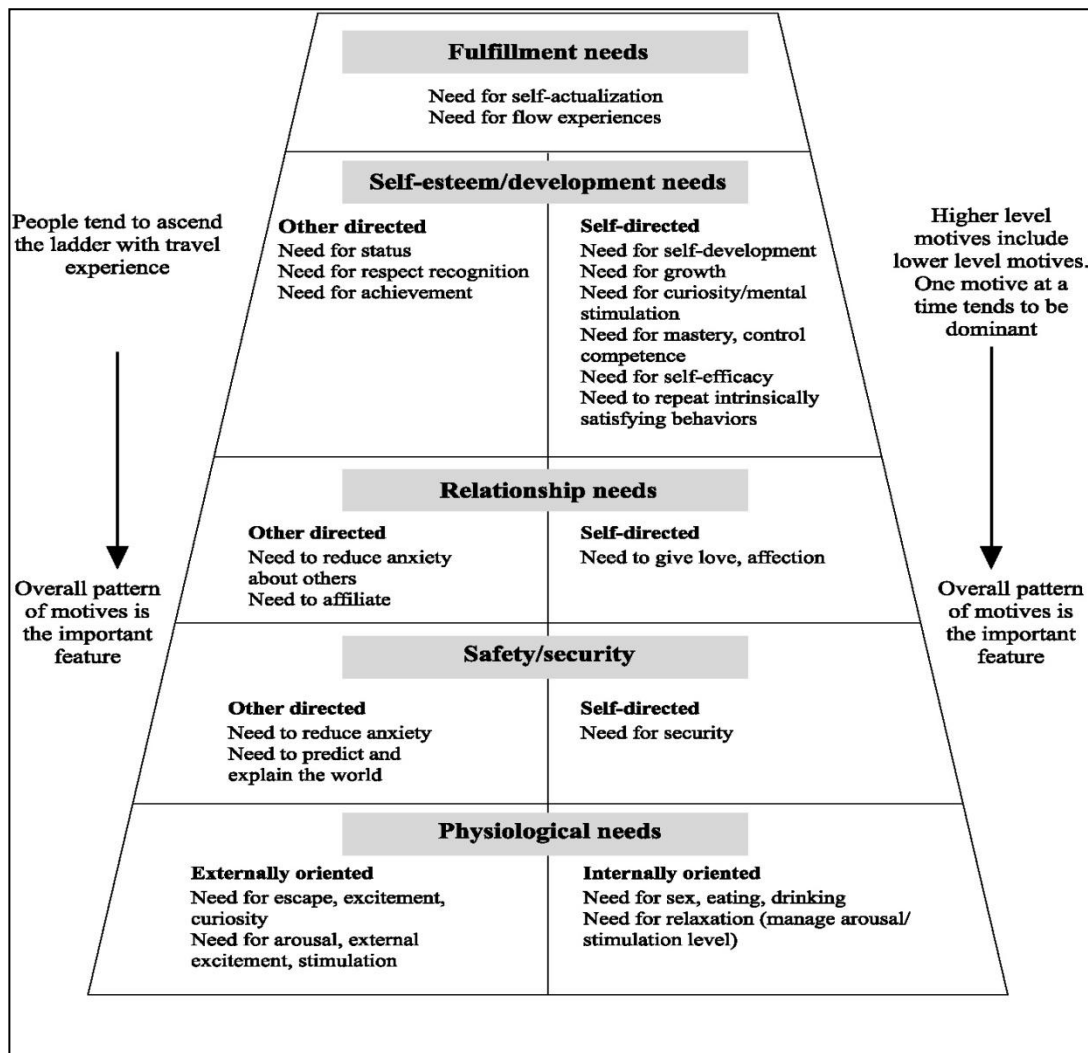


Figure 2.7: The Travel Career Ladder. (Pearce, 1991)

However, this approach has several limitations. For example, the TCL is only a needs-based approach; it does not cover different types of human motivation. In addition, there is weak empirical verification for the safety and risk dimensions in the model (Ryan, 2002).

To conclude, Tracy (1986) has summarized the common arguments against needs theories as:

- Lacking an exact definition for need concept.
- Its hypotheses are not verified or checked up.

- Needs description and types are not obvious.
- Lack of complete needs types and list.
- Disagreement on the source of needs.
- The term ‘need’ entails lack of human’s ability to change.
- The well-known need theories are not proved by many ‘empirical’ studies.

2.4.1.4 Push and pull theories

A large body of tourism literature has investigated the ‘push’ and ‘pull’ factors theories (Dann, 1977, 1981; Crompton, 1979; Zhang & Lam, 1999; Jang & Cai, 2002; Kim, Lee, & Klenosky, 2003). It has been demonstrated that while ‘push’ factors play a major role in forming ‘a demand’ for tourism activity and the tourists’ needs ‘push’ them to take their trips, other factors ‘pull’ them to travel to a particular places or countries. The magnet of the place to pull tourists to visit it is called ‘pulling power’ (Khunou, Reynish, Pawson, Tseane, & Ivanovic, 2009). The most significant studies employing the push and pull factors theories are Dann (1977) and Crompton (1979). According to Holden (2005), Dann (1977) applied the ‘socio-geographical terminology of the push and pull factors’ to describe the process of travelling from the domestic situation to the magnetic destination. He made a connection between the ‘anomie’ and tourism. Moreover, he believed that the pair of terms ‘anomie²’ and ‘ego-enhancement’ are at the core of the push factors.

Crompton (1979) attempted to adapt the push and pull factors in tourist motivation by changing the model to evaluate the tourist’s want to escape from the pressures of daily-life. He considered nine principal motives - seven push/ two pull motives. He also stressed that while the push factors stem from the socio-psychological frame of the tourist, the pull factors result from the core of the destination rather than from the tourist (Wearing & Neil, 1999, p. 122).

In another study, Mannel and Iso-Ahola (1987) suggest two major types of pull and push factors: ‘personal and interpersonal’. They believe that, while the individuals travel from

² Lack of the usual social or ethical standards (Concise Oxford English Dictionary, Eleventh Edition, 2009)

their destination to another to get rid of the ‘personal and interpersonal’ dilemmas that result from their surroundings, they intend to gain the ‘personal and interpersonal’ advantages from the other destination (Pizam & Mansfeld, 1999, p. 9).

The push and pull approach carries with it various well-known limitations, such as it is a double approach, therefore the concentration of measuring the tourist motivation is distracted and confused. It measures the tourist motivations and focuses on the destinations pull factors (Malviya, 2005).

Elsewhere, Krippendorf (1987) studied eight theories of tourist motivations finding some important common ideas among these theories. However, Krippendorf stated that the traveller is motivated by ‘going away from’ more than ‘going towards something’. He stressed that the tourist motivation and behaviour are clearly ‘self-oriented’. Therefore, he agrees with Malviya (2005, p. 50) that pull forces are not as significant in tourist motivation.

2.4.1.5 Plog allocentric/ psychocentric model

In 1972, Plog created a model based on two central personality constructs: ‘allocentricism’ and ‘psychocentricism’ (Figure 2.8). The more allocentric tourists prefer to travel to unusual places in an unorganized tour and they try also to engage with the residents. Psychocentric tourists prefer to visit normal and well-known places with organized packaged tours. In 1979, an energy dimension was attached to Plog’s model, which explained the types of tourist activities. For example the ‘high-energy’ tourist gives preference to many types of activities, whereas the ‘low-energy’ tourist likes a smaller number of activities (Ross, 1998). Griffith and Albanese (1996) indicate that the addition of this dimension to Plog model (1979) has allowed the model to evaluate the different activity levels among tourists.

Several scholars have criticized Plog’s model, for example, Litvin (2006) who states that the theory has a specific application and aim for the tourists of the United States and it is not appropriate for other nationalities and countries. In addition, human nature is complex rather than simple, the view represented in the theory. The theory also has little “independent empirical verification”. The financial factors may influence the change of the

nature of the tourist from allocentric to psychocentric and vice versa. Finally, it is asserted that it is not applicable for use by tourism marketers because it does not cover a wide range of tourist motivations and behaviours. Elsewhere, Woodside and Martin (2007, p. 23) indicate that the level of understanding of tourist motivation by using this model is very limited and it cannot forecast tourist behaviour. Moreover, tourists travel from place to place for different motivations and events.

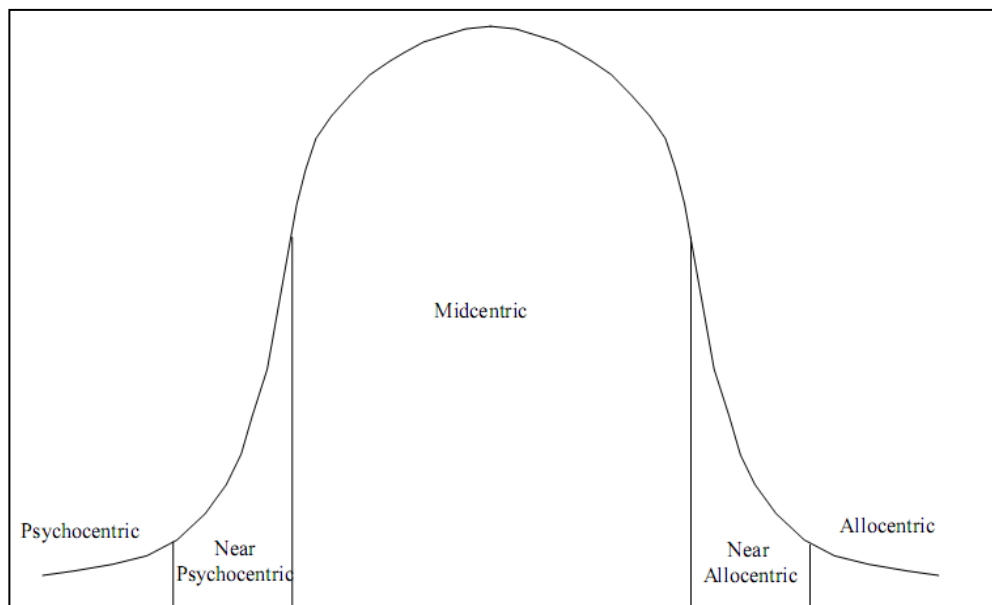


Figure 2.8: Plog's allocentric/psychocentric model. Adapted from Plog (1973)

2.4.1.6 Expectancy theory

Expectancy theory commenced in the USA in the 1930s; it also experienced many developments and modifications in the 1960s. Based upon this theory's tenets, it is asserted that people are motivated by the expectancy of consequences of their activities which will lead to a reward as a rational result of their efforts (Morpeth & Raj, 2007). One of the most well-known theories based on expectancy theory is that instrumentality theory (Vroome, 1960). According to Miner (2007, p. 67), individuals have different levels of preference with different goals and results. They are satisfied when favorite goals are achieved. Vroome also used the concept of valence to describe personal sense of exact 'outcomes'.

Numerous studies have attempted to explain tourist motivation according to expectancy-value theories (Witt & Wright, 1992; Sparks, 2007). Many arguments support the application of expectancy theories to measure tourist behaviour in different forms of tourism. They indicate that the significance of expectancy theory is in providing “comprehensive account of the factors influencing motivations” (Kozak & Decrop, 2009, p. 18).

However, Expectancy Theory has met criticism from some researchers. One limitation is of it being difficult to apply to understanding a tourist’s motivation and forecasting their behaviour due to the complexity of the model (Kay, 2003). It also fails to provide a clear perspective for the time factor and it does not take into consideration the future perspective of the expectancy of reward, which varies from one person to another. Furthermore, this theory depends on hedonism as a means of gaining pleasure and getting rid of pain. Therefore, an individual is motivated by increasing pleasure and reducing pain. This idea is not the standard for the motivation of people in all cases, because many people act and perform their work without seeking pleasure (Lee, 1993). Finally, Lee contends that in many cases, a researcher who undertakes expectancy theory research cannot verify the models. The correlation between the different variables of the model is weak.

2.4.1.7 Self-Determination Theory (SDT)

Deci and Ryan (1985, 2000) developed the Self-Determination Theory (SDT) at the University of Rochester as a large-scale theory of motivation and personality. The theory pays full attention to performance of an action, by performing and engaging in this action with the full sensation of choosing this action. It combines also a group of four-mini theories (Table 2.1). According to Deci and Ryan (2006), self-determination theory can be defined as, “When self-determined, people experience a sense of freedom to do what is interesting, personally important, and vitalizing”.

Interestingly, the theory has a wide range of applications in many fields such as education, health, relationships, organizations, environment, sport and exercise, psychotherapy, psychopathology, and health and well-being (University of Rochester, 2008).

Table 2.3: The Four Mini-Theories, which Constitute SDT

No.	The mini-theory	The function
1	Cognitive evaluation theory	The effects of social contexts on intrinsic motivation
2	Organismic integration theory	The concept of internalization, especially with respect to the development of extrinsic motivation
3	Causality orientations theory	Describing individual differences in people's tendencies toward self-determined behaviour and toward orienting to the environment in ways that support their self-determination
4	Basic needs theory	Elaborating the concept of basic needs and its relation to psychological health and well-being.

Source: Based on University of Rochester (2008).

2.5 Summary of the literature

In recent years, the quantity of literature on the tourism industry has increased markedly. However, the literature on geotourism studies is limited because it is still a new phenomenon. Many issues in geotourism need to be covered by different types of studies to learn about its different dimensions. In addition, the generalizability of much published research on geotourism is problematic. Most studies in geotourism have only been carried out in a small number of areas. There has been a concentration on the general concepts of geotourism rather than providing in-depth discussion about the potential impacts of geotourism and geosites. For example, geotourism definitions, the scope of geotourism interpretation, and geoparks were the major topics of the most recent studies of geotourism. However, there has been little discussion about the motivations of tourists undertaking a geotourism experience. Concerns have been raised by several relevant bodies about tourist motivation because it is at the core of tourists' behaviour (Pearce, 2005). Far too little attention has been paid to tourists' motivation in the geotourism experience.

One of the most significant discussions in the tourist motivation literature is the need for an in-depth and suitable revision of the different types of relevant motivation theories. First, it is crucial to understand the different types of motivation. Second, it is important to know the different factors which must be taken into our account to study motivations. Third, it is

important to use outcomes to choose a suitable motivation theory applicable to a specific form of tourism (Malviya, 2005, p. 55). To date there has been no agreement on a common model or theory of motivation to measure tourist motivation due to the multidimensional nature of the tourism industry and the broad scope of the tourist needs and wants (Lew, Hall, & Timothy, 2008, p. 29).

2.6 Conceptual framework

2.6.1 Introduction

A researcher must pay sufficient attention not only to choose the topic of the research, but also to determine how to investigate it (White, B., 2003). The challenge in this study is to find the appropriate motivation theory for the assessment of tourist motivations to travel to particular geosites. Thus, by reviewing a broad range of theories of motivations, several important limitations need to be considered:

Most theories of motivations are dated, such as the work of (Maslow, 1943; Murray, 1938; McClelland 1955, 1965; Vroom 1964). Therefore, the attitudes, motivations and other traits of personality of the Dot-Com generations may not be the same as the old generations, because at least the external environment of the individuals has turned upside down. However, Guest (cited in Armstrong, 2002, p.59) noted:

Many managers' knowledge of motivation has not advanced beyond Herzberg and his generation. This is unfortunate. Their theories are now over 30 years old. Extensive research has shown that as general theories of motivation, the motivation theories of Herzberg and Maslow are mistaken. They have been replaced by more relevant approaches.

2.6.2 Justification for choosing Self-Determination Theory (SDT)

Most of the present motivation theories do not seem appropriate for covering the different details of tourist motivation in a geotourism experience. An in-depth understanding of different sides of the geological tourist's motivations requires a holistic model. Consequently, it is apparent that the best method to adopt for investigating tourist motivation for those undertaking such an experience is the self-determination theory. After an in-depth revision of the literature, this theory was chosen for many reasons.

Unlike the other tourist and human motivation theories, SDT covers a large range of motivations. The tourist motivation in a geotourism experience will be included within this broad scope of self-determination theory motivations. According to Deci and Ryan (2008), this theory draws full attention to the type of motivation more than the quantity of motivation. Thus, it provides for these types of motivation:

A. Intrinsic motivation

B. Extrinsic motivation

C. Amotivation: “a state lacking of any intention to engage in behaviour” (Markland & Tobin, 2004, p. 191).

Bhatnagar and Karageorghis (2008) assert that SDT has sound applicability for exploring intrinsic and extrinsic motivation; thus they claim this theory to be one of the frequently undertaken practical theoretical methods for studying these motivational types.

Most tourist motivation theories are dual, combining tourist motivation with the magnetic power of the destination. Therefore, they are not providing information about pure tourist motivations stemming from the autonomy of the tourists. As a result, those approaches have caused a mix-up in understanding of tourist motivations, for example, the push and pull factors theories. SDT can over-ride these missing dimensions and limitations by strengthening the concept of autonomy and sense of volition in performing actions or having the experience of choice. Moreover, autonomy can also appear in extrinsic motivations. In other words, the complete sense of “internalization, which allow extrinsic motivation to be truly autonomous or volitional, involves the integration of identification with other aspects of oneself — that is, with other identifications, interests, and values”

(Gagne & Deci, 2005, p.335). White and Thompson (2009, pp. 4-5) contend that this theory is appropriate in the tourism literature:

It appears that much of what exists in the tourism motivation literature lacks a coherent theoretical and operational theory, and emerging work on Self Determination Theory (SDT) may overcome these limitations and provide interesting insights into tourism motivation research.

SDT is appropriate for investigating different types of motivation in geotourism because this theory is based on the differentiation between “autonomous motivation and controlled motivation”. Autonomous motivation includes the desire to act and engage in an activity with a full sense of choosing it because this act is interesting, such as the act of travel to a specific geosite because its outcome is interesting and exciting. Controlled motivation represents a sense of selection within pressure and constraints. Therefore, SDT, “suggests that behaviours can be characterized in terms of the degree to which they are autonomous versus controlled” (Gagne & Deci, 2005, p. 334).

In recent years, there have been an increasing number of studies, which have applied Self-Determination Theory in different fields and sciences. According to the official website of the theory (<http://www.psych.rochester.edu/SDT/>), which is sponsored by the University of Rochester (2008), the applications of this theory have occurred in the following contexts:

- Close relationships
- Education
- Elderly
- Environment
- Exercise and physical education
- Health care
- Information literacy
- Migration

- Organizations and work
- Politics
- Psychopathology
- Psychotherapy and counselling
- Religion
- Sport
- Virtual environments.

Thus, the application of this theory has achieved a common acceptance and success in many fields. In education, most of the studies in motivation in the recent years have been inspired by self-determination theory, particularly the studies on its value aspects (Brophy, 2004).

Moreover, this theory has been included in exercise and sport psychology. It has been employed by many researchers in exercise and sport motivation on a large scale. The intensive application of SDT in sport and exercise studies was based on its ability to cover a broad range of phenomena, which was established on a few basics attached to the “psychological needs of competence, autonomy and relatedness” (Hagger & Chatzisarantis, 2007, p. 281).

Another important usage of this theory has been its application in studying the motivations of second language acquisition (Noels, Clement and Pelletier, 1999; Noels, Clement, Pelletier and Vallerand, 2000). The researchers applied it in this field because second language acquisition is associated with a set of intrinsic and extrinsic regulatory factors (Doughty & Long, 2003). Vallerand *et al.* (2008, p. 260) describe the quality of Self-Determination Theory in motivation research:

Contemporary motivation research is vibrant and nowhere is it more evident than with respect to SDT. SDT allows us to not only better understand human processes in a number of areas (education, work, leisure activities, parenting, etc.) but also to guide applications and interventions to ameliorate the human condition.

In addition, many international conferences have been held to discuss the issues of self-determination theory (Table 2.5). More than 300 researchers participated in the SDT Conference in Toronto Canada in 2007 (Vallerand, Pelletier, & Koestner, 2008).

Table 2.4: The Place and Date of Previous SDT Conferences

SDT International Conferences	Date	Place	Country
The First International Conference	1999	University of Rochester	USA
The Second International Conference	2004	University of Ottawa	Canada
The Third International Conference	2007	Toronto	Canada
The Fourth International Conference	2010	Gent	Belgium

Source: Adapted from University of Rochester (2008).

Interestingly, Pearce (2005, p. 52) identifies seven elements to determine the appropriateness of a motivation theory for use in the tourism context (Table 2.5).

Table 2.5: The Seven Elements of an Appropriate Tourist Motivation

N.	Element	Explanation
1	The role of the theory	Must be able to integrate existing tourist needs, reorganize the needs and provide a new orientation for future research
2	The ownership and appeal of the theory	Must appeal to specialist researchers, be useful in tourism industry settings and credible to marketers and consumers
3	Ease of communication	Must be relatively easy to explain to potential users and be universal (not country specific) in its application
4	Ability to measure travel motivation	Must be amenable to empirical study. The ideas can be translated into questions and responses for assessment purposes
5	A multi-motives versus single-trait approach	Must consider the view that travellers may seek to satisfy several needs at once. Must be able to model the pattern of traveller needs, not just consider one need.
6	A dynamic versus snapshot approach	Must recognise that both individuals and societies change over time. Must be able to consider or model the changes that are taking place continuously in tourism
7	The roles of extrinsic and intrinsic motivation	Must be able to consider that travellers are variously motivated by intrinsic, self-satisfying goals and at other times motivated by extrinsic, socially controlled rewards (e.g. others; opinions)

Source: Adapted from Pearce (2005, p. 52)

Based upon the application of these seven requirements to self-determination theory, it is noted that the theory meets all the requirements and provides reasonable and accepted performance as a motivation theory for this study. According to the first element, the theory must be able to perform and function as an integrated theory of motivation and investigate tourist needs and provide existing and future orientation for the studies of tourist motivation. SDT satisfies this requirement as a holistic theory of motivation, which covers the tourist needs and allows the researcher to comprehend these needs and develop the research profiles. Furthermore, SDT has been studied, elaborated, refined, and practised by a network of scholars and researchers from all parts of the world (University of Rochester, 2008). It appeals to its users such as researchers, scholars and marketers and therefore it meets the second element. The third element supposes that tourist motivation theory is easy to communicate in two ways: easy to explain to its users and its application must not be to a specific site or country.

However, SDT is universal in its application and the researcher found much evidence in the literature review to prove that its application is relevant everywhere and in many contexts; it is not easy to explain and communicate. The complexity of the SDT continuum decreases the popularity of its usage in the tourism context. According to Valery, Ryan and Sheldon (2011), based upon the SDT tenet which in turn is based on the contention that autonomous motivation can apply to all people worldwide, researchers employ this theory across cultures, sex and time (Chirkov & Ryan, 2001; Chirkov, Ryan, Kim, & Kaplan, 2003; Grouzet, Otis, & Pelletier, 2006; Legault, Green-Demers, & Pelletier, 2005; Roth, Assor, Kanat-Maymon, & Kaplan, 2006), across ethnicities, nations and different languages (Hagger, Chatzisarantis, Barkoukis, Wang, & Baranowski, 2005; Rudy, Sheldon, Awong, & Tan, 2007, etc).

SDT fulfils the fourth and fifth elements. The fourth element focuses on the ability of tourist motivation theory to measure travel motivation and the fifth element suggests that tourist motivation theory should incorporate multi-motives versus a single-trait approach. Therefore, SDT has its own way of measuring motivation; it is not a one-sided theory being a ‘macro theory’ that can cover a broad scope of needs and motivations (Figure 2.9).

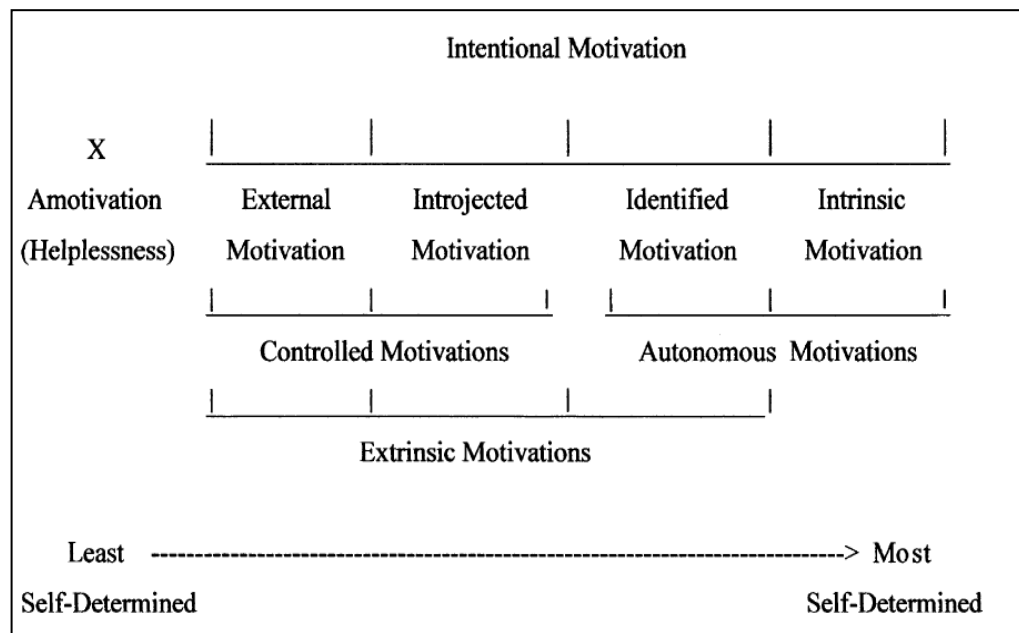


Figure 2.9: Different types of motivation in SDT. Reprinted from Sheldon, Turban, Brown, Barrick, & Judge (2003, p. 362)

For the sixth element, SDT is able to meet this condition because of its dynamic nature and not being limited to a specific time. Furthermore, for the final requirement, SDT not only investigates the intrinsic and extrinsic motivation, but also it covers the amotivation state.

To date various other theories of motivation have been developed and introduced to measure many cases in many contexts; these are different from the context of this study. Most of those theories have also been developed for a specific place, time, participants, and purpose. For example, the Plog (1972) model was designed for studying tourists in the USA. This is one example from the majority of theories that are not current or valid for the purpose of this study. Many theories are used to assess tourist and human motivations, and each has its advantages and drawbacks. Most of the present theories and models cover only one side of tourist motivation.

2.6.3 Self-Determination Theory (SDT)

Before explaining the main concepts and mechanism of the Self-Determination Theory (SDT) continuum, it is necessary to clarify why the demographic variables and the source of information used by the tourist have been added to the SDT model.

The different demographic variables, such as age, gender, education, and income (Figure 2.10) play an important role in tourism demand. For example, the decision for choosing a destination and the nature of tourism activities varies according to the age of the tourist. Several tourism studies investigating youth and backpackers have been carried out on the important role of the age of travellers when choosing a specific type of tourism. Other demographic variables influence tourism demand, such as educational qualification and income levels (Page & Connell, 2006). In this model, the demographic variables are essential for profiling tourist motivation in a geotourism context. The literature review found several studies to reveal that the demographic characteristics affect the choice of a tourist to undertake a specific tourism experience and destination (Huybers & Benett 2000; Oum & Lemire 1991; Richardson & Crompton, 1988a).

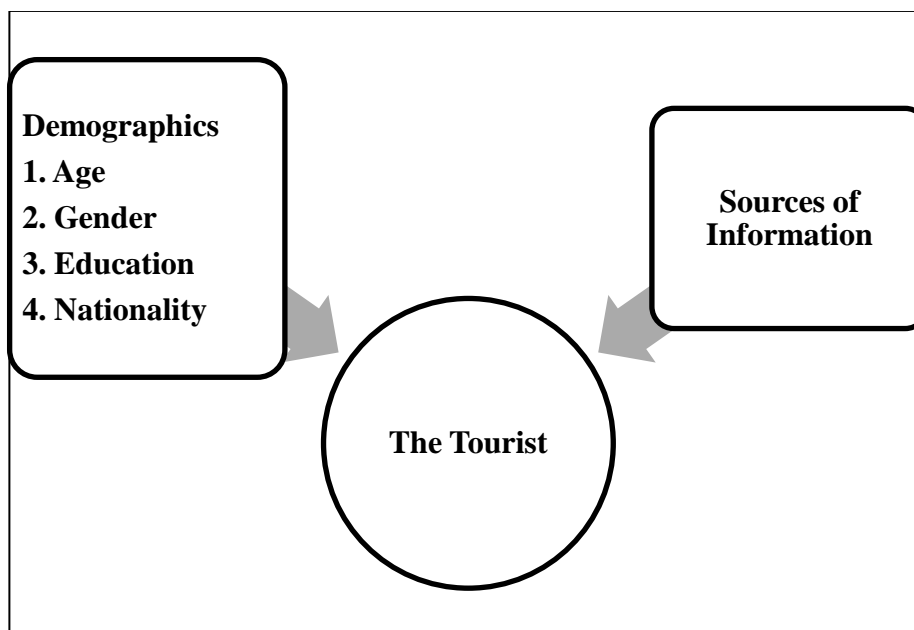


Figure 2.10: The first phase of profiling the tourists in this study

According to Kozak and Decrop (2009, p. 52), “No complete model has yet been constructed which explains consumer choices in source of travel information”. However, Gartner (1993) stresses eight sources of information are used by tourists:

1. The classic advertising materials of travel
2. Different types of publication from the destination marketing sources or tour operators
3. Promotional statements about the destination made by famous people
4. Press production about destination such as reports and articles
5. Promotion of the destination in the media and other materials such as travel guides
6. Word-of-mouth of the destination’s visitors
7. Information from counsellors and tour operators
8. The outcome of the foregoing experience in the destination.

It is essential to collect full data about the sources of information that used by the tourists to analyse the relationship between the different types of motivations and the sources of information, particularly, the relation between these in the amotivation category and their sources of information.

The significance of SDT is in its ability to provide an integrated range of motivation analysis. Thus, it consists of three central concepts:

1. Intrinsic motivation (IM): people act with full self-direction and autonomy and also they are free from external forces. For example, while people are involved in an act they feel aroused and do it wholly and volitionally. It is therefore “Prototypically autonomous” (Gagne & Deci, 2005, p. 334).
2. Extrinsic motivations (EM): people are acting to obtain some external rewards or outcomes. Although many arguments state that EM lacks autonomy, self-determination theory indicates that EM is at variance with the degree of the autonomy. Ryan and Deci (2000) clarified the idea of autonomy of extrinsic

motivation by using this following example. A student works hard to obtaining valuable outcomes and rewards, such as paving the way for a favourite job, whereas another student does the same to be compliant with his parents' command. Thus, both of them are 'extrinsically motivated', but, the first student carries into his action with a sense of choice while the other engages with the effect of exterior regulation. 'Both represent intentional behaviour', but the effect of the autonomy factor is different among them .

3. Amotivation (AM): refers to a lack of motivation and it occurs when people do not realize the 'contingency' between their action and the reward or outcome of this action (Deci & Ryan, 2004).

The essential components of SDT are the psychological basic needs of autonomy, competence, and relatedness. Deci and Ryan (2000, p. 72) have defined psychological need in this theory as "innate psychological nutrients that are essential for ongoing psychological growth, integrity, and well-being" Autonomy, competence, and relatedness are the fundamental needs of SDT. Thus, autonomy represents the independence, self-direction and lack of control of the external force, while competence refers to the qualification, capability and efficiency of the individual when he does his action. In addition, relatedness is a type of connectedness with others and a sharing of their feelings. The role of these basic needs in this theory is to comprehend and forecast the motivation and behaviour of people (Sheldon, Turban, Brown, Barrick, & Judge, 2003).

SDT involves four types of extrinsic regulation, which arranges into a continuum from 'external control to autonomous self-regulation':

1. External regulation: while people take action or participate in an activity, outside forces, pressure and outcomes have regulated their actions.
2. Introjected regulation: we should carry out this action because if we did not behave or do this action, we 'should or would' have a sense of guilt.
3. Identified regulation: when people take on the Introjected regulation as a significant element for them.

4. Integrated regulation: “identified values and regulations are integrated in one’s coherent sense of self.” (Maehr, Karabenick, & Urdan, 2008, p. 22), (Figure 2.11).

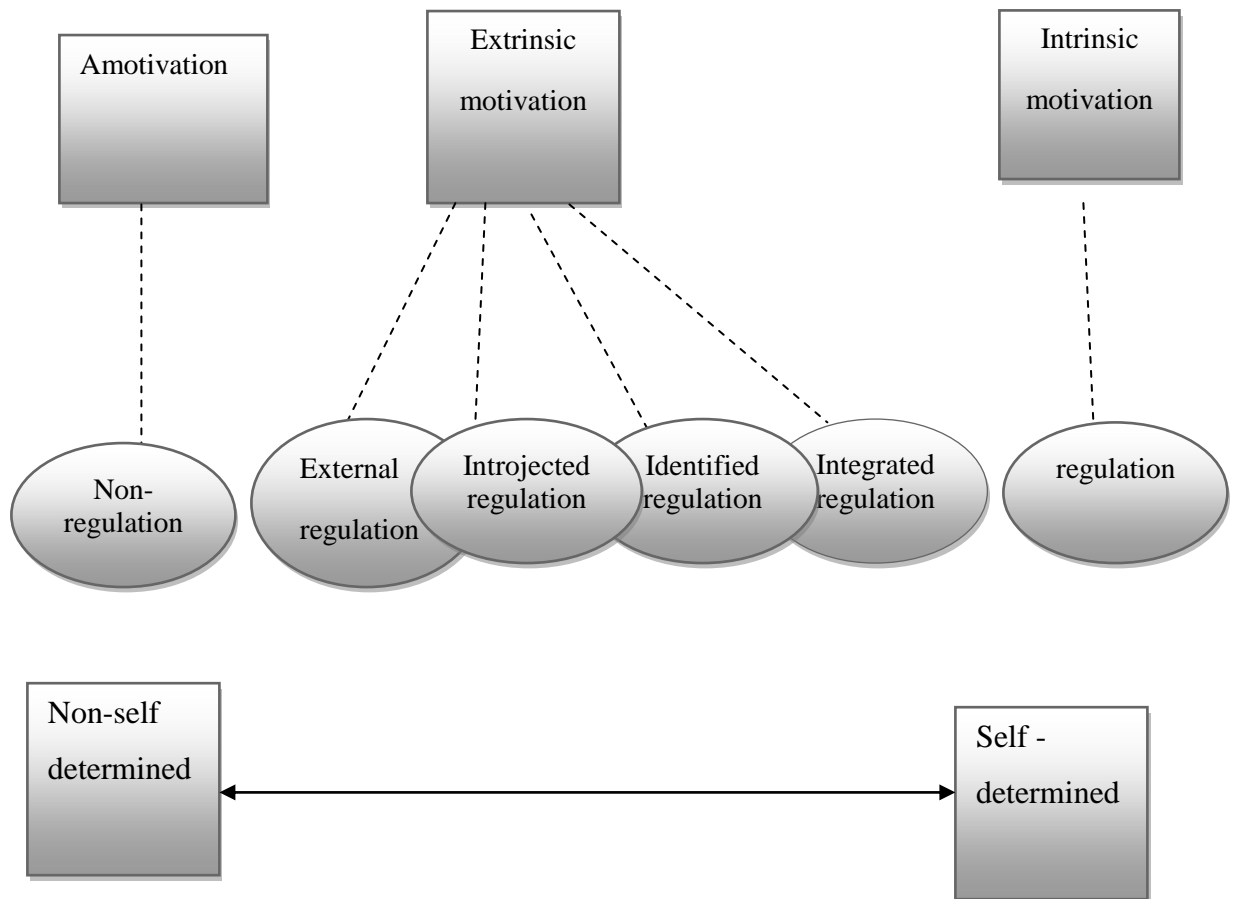


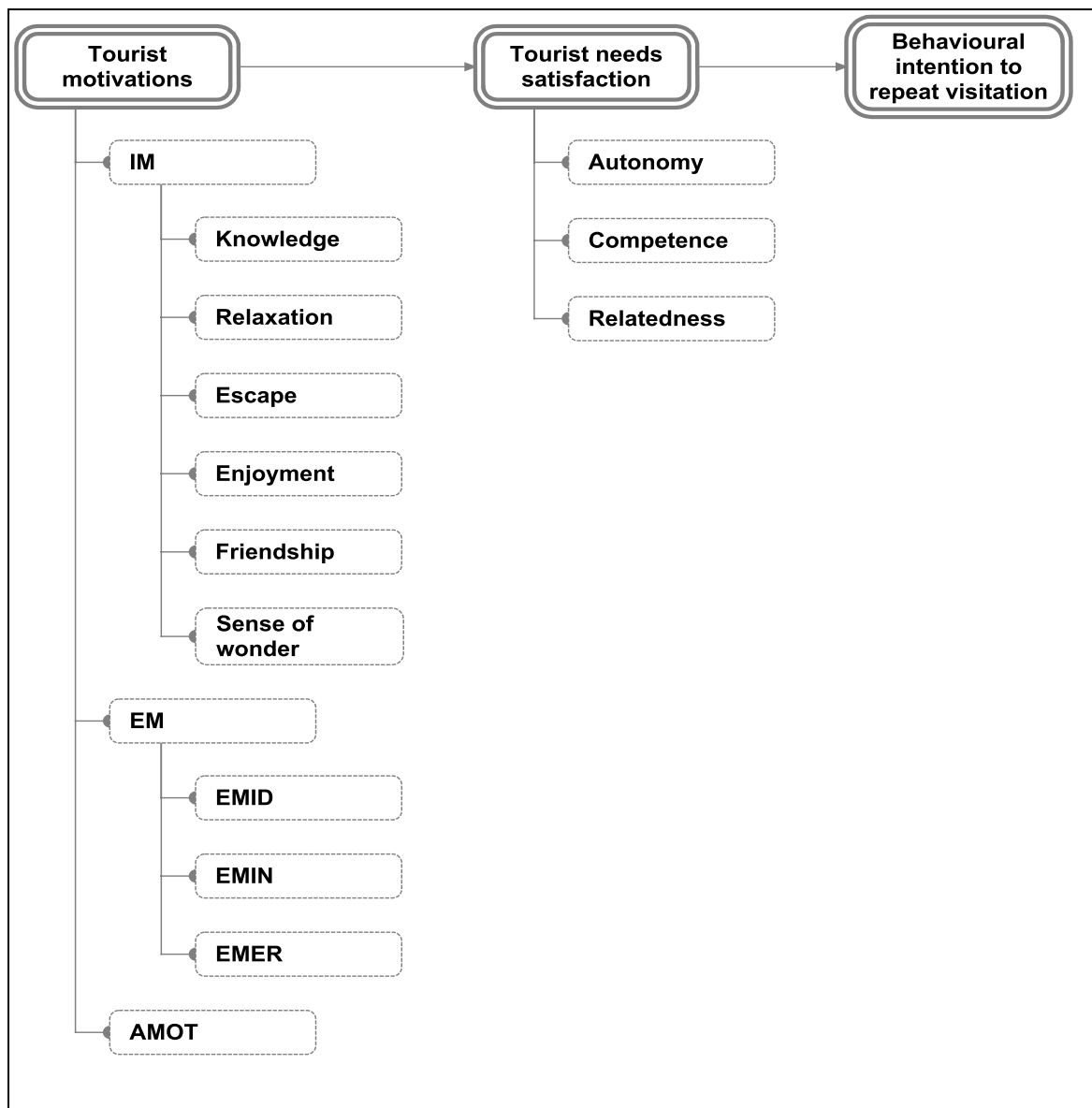
Figure 2.11: Self - Determination Theory (SDT). Adapted from Ryan and Deci (2000)

Drawing on SDT’s tenets, the proposed model for this study involves the three motivational types (Figure 2.12): intrinsic motivation (IM), extrinsic motivation (EM) and amotivation (AM). It is reasonable to claim that the intrinsic motivation measures in this model were used intensively in the pertinent tourism literature (see section 3.2.2.3/ Chapter 3). They are knowledge gain, enjoyment, escape from the hustle and bustle of daily life routine, relaxation, friendship and a sense of wonder. The extrinsic motivation measures included:

Identified regulation, introjected regulation and external regulation. However, this study does not measure the construct ‘integrated regulation’ of extrinsic motivation, which is considered the most autonomous type of extrinsic motivation for several reasons. First, integrated regulation is inconsistent with the self-determination theory .

Second, most of the established subscales relating to SDT in the related literature do not measure the concept of ‘integrated regulation’ (Pelletier *et al.*, 1991), such as the leisure motivation scale (LMS 28), the sport motivation scale (SMS) of Pelletier et al. (1995), and the Situational Intrinsic Motivation Scale (SIMS) of Guay et al. (2000). Overall, it seems that the motivation of tourists engaging in a geotourism experience at the geosites will fall within this wide range of SDT motivational types.

The second step of this model suggests that the outcomes of motivation, the satisfaction of the basic psychological needs of tourists, may lead to an intention to repeat the visitation to a particular geosite. As a consequence, the act of revisiting the geosite and re-experiencing geotourism is a vital factor in the success of geotourism because it is still a new niche in the tourism industry. On the contrary, in the amotivation context, the potential outcome of the geotourism experience is lack of intention of repeating the experience. In this case, the reasons behind the amotivation state and management of the geosite are investigated to comprehend the roots of this dilemma.



Notes: IM = intrinsic motivation, EMID = identified extrinsic motivation, EMIN = introjected extrinsic motivation, EMER = external regulation of extrinsic motivation, AMOT = amotivation.

Figure 2.12: Proposed conceptual model for this study. Based on the Self-Determination Theory model, Figure 2.11

2.6.4 Justifications for adding re-visitation to the conceptual framework

In any destination there are two types of tourists who shape the annual visitors rate; the first-time visitors and repeat visitors. Therefore, the combinations of both components identify the lifecycle of a destination (Oppermann, 1999). Repeat visitation is the main target of many tourism destinations, because the cost of enticing the repeat visitors is lower than spending on promoting the destination and attracting new tourists (Um, Chon, & Ro, 2006). Oppermann (1998, p. 131) argues that:

One of the often-repeated myths in the marketing literature is that it is five or six times more effective to attract previous customers than it is to gain new ones. This myth has also found its way into the tourism literature, albeit with no statistical support.

While repeat visitation has been investigated in many tourism studies (Reid & Reid, 1993; Oppermann, 1998, 1999; Alegre & Juaneda, 2006; Hong, Lee, Lee & Jang, 2009), there has been little research on repeat visitation in geotourism. The status of geotourism as a new form of tourism requires more focus on the repeat visitation to the same geosite, for many reasons:

- The tourists who have a special interest in geotourism have common characteristics and interests, such as geological background, nature lovers, aesthetic sense and landscaping. This group of tourists (geotourists) have the geological knowledge and sufficient motivation to experience geotourism many times.
- Geotourism has existed since the 1990s, demonstrating that retaining the first time tourists or geotourists is more effective than spending huge costs for promoting the geosites for new tourists, particularly as the value of the geotourism experience will still not be popular with some types of tourists. The actual status of geotourism in the world needs more concentration on the homogenous group (geotourists) which is sufficiently motivated to experience geotourism and so satisfy their needs in order to make them regular visitors to the geosites.

2.7 Summary

This chapter reviewed the extant literature on tourism, geotourism and tourism motivation. The first section provided a general view on mass tourism and the development toward alternative tourism and different types of sustainable tourism. The second section investigated the advent and development of geotourism as a new niche market in the tourism industry. Additionally, this chapter explored the major motivation theories derived from the literature review and the applications of these theories. Next the chapter explicated SDT as an appropriate conceptual framework for investigating the motivation for tourists in geotourism. The final section consolidated the reasons why the conceptual framework for this study was based on the tenets of SDT.

CHAPTER THREE - RESEARCH DESIGN

3.0 Introduction

The main purpose of this research is to understand the different motivations behind tourists undertaking a geotourism experience, and to investigate the desire of repeat visitation to a geosite. This chapter describes the design adopted in this research so as to answer its research questions. The researcher discusses the research approach to be employed in the study, SDT, and the stages by it will be implemented. The text then describes the research method adopted, before outlining the sampling design and data collection methods. Additionally, this chapter lists the site selection in this study, outlines the research procedures to be used, the timeline for the completion of each stage of the study, and discusses the manner of data analysis. It also explains the main limitations for this study and discusses the ethical considerations of the research and its potential problems.

3.1 Research approach

The main purpose of this study is to explore the different motivations behind tourists engaging in a geotourism experience and to investigate their behavioural intention to revisit the geosite. Using SDT as a framework, this research seeks to investigate the different types of motivation (intrinsic motivation, extrinsic motivation and amotivation) for tourists undertaking a geotourism experience, and how these motivations correlate with their desire to revisit the geosite?

This main research question has a number of subsidiary research questions. They are:

1. What are the major reasons for the tourist to experience ‘amotivation’?
2. Does the geotourism experience satisfy the three basic psychological needs of SDT, namely, autonomy, competence, and relatedness?
3. Have tourists sought information to plan and prepare for their geotourism experience and if so, what were the sources of this information?
4. Is SDT appropriate for investigating tourists’ motivations in a geotourism context?

5. Do the tourists' motivations differ between two countries in a geotourism context?

3.1.1 Theoretical paradigms underpinning tourism research

A research paradigm can be defined as, “A perspective held by a community of researchers that is based on a set of shared assumptions, concepts, values and practices” (Johnson & Christensen, 2010, p. 31)

This study is situated within the positivist paradigm to both gain a better understanding of tourism behaviour and to predict the explanation of this behaviour or phenomenon. According to Jennings (2010, p. 38), “being based on casual relationship, these relationships would be made, which in turn would be extrapolated to explain any future occurrence of the behaviour, event or phenomenon”. Decrop (1999, p. 157) states that the positivism paradigm has dominated a large body of tourism studies due to the possibility of its statistical generalization and prediction by concentrating on the general average as representative. Reality has been considered as “Objective, tangible and single” in the positivism perspective. Philimore and Goodson (2007, p. 37) argue that tourism studies have been dominated by positivist approaches and that “tourism is less methodologically and theoretically advanced than other fields in the social sciences”.

3.2 Research Method

Research methods are generally classified into two main types, qualitative and quantitative approaches. Jennings (2010) identifies three additional methods including the mixed method approach, indigenous methodologies and cross-cultural methodologies.

It has been argued that researchers should use qualitative methods for exploratory studies, especially if there is little data available about the topic and the studies about the population that is the focus of the research are limited. In addition, this is a suitable approach when the researcher needs to take note of the participants and construct new knowledge, which is based on their thoughts . On the other hand, quantitative approaches involve gathering numerical data. According to Mujis (2004, p. 1), quantitative method is “explaining

phenomena by collecting numerical data that are analysed using mathematically based methods (in particular statistics)’’.

There are several important differences between qualitative and quantitative approaches (Table 3.1). The qualitative approach is exploratory and descriptive research. It requires probing questions for a small sample, whereas the quantitative approach typically involves a large sample. The skills, the hardware, and the other special requirements are also different between the two approaches.

Table 3.1: Qualitative versus quantitative research

Comparison dimension	Qualitative research	Quantitative research
Types of questions	Probing	Limited probing
Sample size	Small	Large
Information per responder	Much	Varies
Administration	Requires interviewers with special skills	Fewer special skills required
Type of analysis	Subjective, interpretive	Statistical, summarization
Hardware	Tape recorder, projection devices video, pictures, discussion guides	Questionnaires, Computers, printouts
Ability to replicate	Low	High
Training of the research	Psychology, sociology, social psychology, consumer behaviour, marketing , marketing research	Statistics, decision models, decision support systems, computer programming, marketing, marketing research
Type of research	Exploratory	Descriptive or causal

Source: McDaniel & Gates (1998, p. 99)

3.2.1 Justification for choosing the research method

There are several factors to be taken into account when selecting an appropriate research methodology. These include the nature of the study or the research question and the potential limitations on the research, such as money, time, required tools and human factors (Jennings, 2010). Due to the availability of a considerable amount of tourist motivation studies as well as geotourism literature, the researcher believes that there is no need to use mixed method approaches (the qualitative and quantitative approaches). Furthermore, one clear limitation of the qualitative approach is the issue of sampling. On one hand, the size of the potential sample is small; but on the other hand, according to Maxwell (2005, p. 88), it involves “the purpose of representing the population sampled” Thus, the single usage of the qualitative method in this research will not allow for the collection of the required data. Moreover, the nature of the purpose of this study is to conduct measures on a large sample, which has a significant advantage for the study. Large samples provide more reliable results than small ones (Avasarika & Chordia, 1990). Therefore, the positivist paradigm is suitable for the purpose of this study and this research will employ a quantitative approach.

It is believed that the main method for gathering quantitative data (positivistic) in tourist motivation studies is to provide the appropriate motivation list obtained from the tourism literature and integrate all these items in one questionnaire (Woodside & Martin, 2007). According to Kozak and Decrop (2009, p. 4), quantitative methods have been intensively used in consumer studies in the tourism literature and they answer, “what, when, how, who and where questions”. Quantitative methods play a significant role in producing knowledge that transcends the potential respondents of the study, reflecting the whole population of the study. Thus, due to the lack of motivation studies of tourists engaging in a geotourism experience, the implementation of quantitative methods in this research seeks a generalisation that will add new knowledge about the motivation of tourists in the geotourism literature and generate understanding and prediction of the tourists’ motivation in a geotourism experience.

3.2.2 Questionnaire design and data collection

This section includes the design of the questionnaire and the selection of the different variables and measures using in this study.

3.2.2.1 Questionnaire (quantitative)

According to Mukherjee (1995, p. 25), the questionnaire is “a group of questions designed to elicit information upon a subject, or a sequence of subjects, from a set of respondents”. Broadly speaking, there are two main types of primary data collection in the quantitative approach. The first is observation and the act of counting behaviour. The second is the questionnaire to find suitable replies for particular questions. Accordingly, researchers use a questionnaire in their studies for collecting primary data, with the questionnaire applied in more than 85% of the quantitative studies (McNabb, 2002).

There are four main questionnaire designs. They are:

1. Exploratory surveys, which include the description of the population of the study as illustrated by the “national census”. In the tourism literature, researchers might conduct an exploratory survey as a probability sampling method to represent the whole population more than using a large scale sample.
2. Descriptive surveys expressing the different demographic variables of tourists, the different activities at the targeted destination, as well as the social and economic contexts for the chosen sample.
3. Explanatory surveys test the different hypotheses of a study.
4. Predictive and evaluative surveys utilized by managers to improve their means to take a decision or evaluate the current performance (Jennings, 2010, p. 232).

In this research, the main method of data collection is the questionnaire, self-administered to be completed directly by the respondents themselves. This type of questionnaire has two major benefits: cost-effectiveness and simplicity of application. It enables the researcher to gather data from a large group of respondents with little cost and work. In addition, the self-administrated questionnaire offers ‘anonymity’ for the respondent. Therefore, the researcher should get more honest answers from them (Mitchell & Jolley, 2009). The self-

completion questionnaire involves less administration because the chosen respondents of the study perform all large portions of the questionnaire tasks, such as, reading and completing the questionnaire. Generally speaking, there are two ways of distributing the survey. The researcher can hand the questionnaire directly to the respondents or put it in an appropriate place for collection and completion. However, it was highly recommended the questionnaire be handed directly to the respondents because it enhances the personal contacts between the researcher and the potential respondents and increases the likelihood that it will be completed and returned to the researcher (Jennings, 2010). In the tourism and leisure context, most researchers use on-site surveys to conduct their studies. On-site surveys are conducted with the users of the tourism and hospitality facilities, who are surveyed on-site (Veal, 2006). An on-site survey questionnaire was chosen for use in this study. `

However, the questionnaire has some limitations. One major drawback of this method is that people who cannot read or write are not able to complete the questionnaire. Moreover, the main information for the questionnaire surveys is totally reliant on the respondents' responses and the format of the questionnaire. Thus, there may be inaccuracy in the results of questionnaires. Another limitation with the questionnaire is that usage of improper scales or tests can affect the validity of the questionnaire (Pawar, 2004).

3.2.2.2 Questionnaire design

The researcher used existing scales and measures in the questionnaire of this study, such as the Leisure Motivation Scale (LMS 28) which was developed by Pelletier, Vallerand, Brière, & Blais (1989), the Basic Psychological Needs Scale (BPNS) of Deci & Ryan (2000), and the behavioural intention battery designed by Zeithaml, Berry, & Parasuraman (1996). According to Weathington, Cunningham and Pittenger (2010, p. 241), "Whenever possible, researchers are better off using existing scales or measures that other researchers have shown to be reliable and valid". Therefore, the usage of existing scales provides better reliability and validity for the survey.

The questionnaire was written in the English language and adjusted by an English language expert to ensure the validity and accuracy of the language of the questionnaire. The questionnaire was administered after the event only to those who identified themselves as tourists, who wanted to participate in this study, and who could speak English. English language is widely accepted as a lingua franca language (House, 2003).

The first page of the questionnaire was devoted to the cover letter (Appendix A1). The researcher used the ECU logo, which according to Smith (2010, p. 66), can add “an aura of professionalism”. The cover letter included a brief description of the study, the purpose of the survey, the scope and the contribution of the study to the existing knowledge base, and a statement about confidentiality or anonymity as follows:

This is an anonymous questionnaire. Please read the information letter carefully as it explains fully the intention of the research project. Please also ensure that you do not write your name (or any other comments that could identify you) on the questionnaire. By completing the questionnaire, you are consenting to take part in this research.

Additionally, there was a statement about how the participant may obtain additional information or clarification about the study, and another statement about the contact details of the research ethics officer at ECU for any concern or complaint. Finally, there was a brief expression of thanks for the respondent’s participation in the survey.

The questionnaire structure consisted of 9 questions and 47 statements, which were divided into five parts as follows:

1. Statements (1 to 4) represented the demographic background of the respondent (gender, age, educational level and his/her nationality).
2. Questions (1 to 2) related to the source of information that the respondent used before travelling to the geosite.
3. Statements (1 to 20) related to the intrinsic motivation, extrinsic motivation and amotivation of the respondents.
4. Statements (1 to 10) represented the psychological basic needs satisfaction of the respondents.

5. Statements (1 to 13) related to the behavioural intention for repeat visitation to the geosite.

3.2.2.3 Variables and measures

To select the items and incorporate them into the questionnaire, the researcher used studies about SDT derived from the literature review, in particular, the models of the questionnaires in the website (<http://www.psych.rochester.edu/SDT/>), and of those who developed the theory, Deci & Ryan (2000), which is sponsored by the University of Rochester. An example of the resources on the University of Rochester website is the Basic Psychological Needs Scale (BPNS), which was described by the authors as:

Self-Determination Theory posits three universal psychological needs and suggests that these must be ongoingly satisfied for people to maintain optimal performance and well-being. The BPNS is a set of questionnaires that assess the degree to which people feel satisfaction of these three needs (University of Rochester, 2008).

The Basic Psychological Needs Satisfaction (BPNS) Scale has 21 items, which evaluate the state of the three basic needs - autonomy, competence and relatedness - of its participants. BNPS has been used in many studies in different contexts: the BPNS was used in an investigation by La Guardia, Ryan, Couchman, & Deci (2000); the BPNS in Life Scale was used by Gagné (2003) and by Kashdan, Julian, Merritt, and Uswatte (2006); an adaptation of the scale for assessing needs satisfaction in physical education classes was created and used by Ntoumanis (2005). Additional context applications can be found readily (Baard, Deci, & Ryan, 2004; Deci, Ryan, Gagné, Leone, Usunov, & Kornazheva, 2001; Ilardi, Leone, Kasser, & Ryan, 1993; and Kasser, Davey, & Ryan, 1992) (University of Rochester, 2008).

For the purpose of this study, the questionnaire was designed as outlined above to measure the following variables: Demographic information of the tourists (age, gender, nationality and education); sources of information used by the tourists prior to visiting specific geosite; intrinsic motivation (IM) of the tourists; extrinsic motivation (EM) of the tourists; amotivation (AM) of the tourists; needs satisfaction with the geotourism experience; and behavioural intention to revisit the geosite

The independent (predictor) variables (IV) in this study are the intrinsic motivation, extrinsic motivation and amotivation. The dependent variable (DV) is the behavioural intention to revisit the sites.

Based on the literature, the measures that were employed for each of the variables are as follows:

Source of information

This section comprised items asking about any source of information gleaned before deciding on the geosite. Several studies investigating information have been recorded in the tourism literature as shown in Figure 3.1 (Snepenger, Meged, Snelling & Worrall, 1990; Fodness & Murray, 1997, 1998, 1999; Gursoy and McCleary, 2003; Sparks & Pan, 2009). The items included in the questionnaire for this research were based on the model of classification of tourism information sources by Fodness and Murray (1997).

Source of Information	Type of Information	
	Impersonal	Personal
Commercial	Brochures Guide books Local tourist offices State travel guides	Auto clubs Travel agents
Noncommercial	Magazines Newspapers	Friends or relatives Highway welcome centers Personal experience

Figure 3.1: Classification of tourism information sources. Reprinted from Fodness & Murray (1997, p. 506)

Fodness and Murray (1997) used this model to investigate the conceptualization, measurement and use of information in leisure trip planning. However, the section on source of information for the tourists undertaking a geotourism experience has a twofold utility. First, the respondents were asked if they used information about the geosite before undertaking their trip. Therefore, the researcher was able to use a dichotomous scale (Yes/No) for the following question:

Did you use any source of information about Crystal Caves before undertaking your trip?

Secondly, the respondents were then asked to identify the main source of information they had used before undertaking their trip to the geosite. The list of sources of information, adapted from Fodness and Murray (1997), are:

- Brochures
- Local tourist offices
- State travel guides
- Magazines
- Newspapers
- Travel agents
- Friends or relatives, and
- Personal experience

The researcher added the Internet to the Fodness and Murray list in this questionnaire because the Internet has totally changed the scope and nature of the information source in tourism context, and is considered one of the most significant technologies to have revolutionized travellers' behaviour.

- **Tourist motivations**

This section consisted of 20 items measuring the motivational types (intrinsic motivation, extrinsic motivation and amotivation). The following statements described different types of motivation for travelling to a site with geological features. The tourist sample was asked, 'Using the scale below, please circle the level of agreement with each of the reasons for why you travelled to Crystal Cave':

Why did you travel to the Crystal Cave today?

Intrinsic motivation

The intrinsic motivation scale (IM) needed for this research consists of 11 items, which include six subscales:

- A. Intrinsic motivation to gain knowledge.
- B. Intrinsic motivation to enjoy.
- C. Intrinsic motivation to relax.
- D. Intrinsic motivation to experience sense of wonder.
- E. Intrinsic motivation to escape.
- F. Intrinsic motivation toward friendship.

A five point Likert-type scale was used to respond to the items. The scale ranged from 'strongly disagree' (1) to 'strongly agree' (5). Most subscales have two items; however, because the escape factor was used only to express the escape from the hustle and bustle of the daily life, the researcher employed one item to represent this factor. Despite the single item being problematic and having measurement issues, some previous tourism motivation surveys had used a single item measure. According to Wanous *et al.*, (1997), the use of a single-item measure can be accepted in two cases, self-reports facts, such as age, qualifications, experience, and years etc. and in psychological constructs.

A. Intrinsic motivation to gain knowledge:

Knowledge has been used extensively in the tourism literature as one of the main motivational factors for tourists undertaking different tourism experiences. Numerous studies have attempted to investigate the knowledge factor in the tourism motivation context. (Ross & Iso-Ahola, 1991; Fodness, 1994; Cha, McCleary, & Uysal, 1995; Oh, Uysal, & Weaver, 1995; Crompton & McKay, 1997; Hanqin & Lee, 1999; Jang & Cai, 2002; Kim & Jogaratnam, 2002; Yoon & Uysal, 2005; Kim, Jogaratnam, & Noh, 2006).

In the geotourism context, knowledge is one of the most influential outcomes of a geotourism experience. Thus, a number of studies have argued that a geotourism experience stimulates the knowledge of the tourists about geology, geoconservation and geomorphology (Dowling & Newsome, 2006, 2010; Newsome & Dowling, 2010; Hose, 2008; Robinson, 2008; Kim *et al.*, 2008; Members of the Geological Society of Australia (GSA), 2008; Farsani, Coelho & Costa, 2010).

Members of the Geological Society of Australia (GSA) conducted a questionnaire to identify their members' main travel purposes. Geotourism was one of these travel purposes (Robinson, 2008). The findings suggested that enhancing knowledge of some of Earth's geological features was the most significant reason behind their travel.

In this study, the gaining knowledge factor had two items:

1. To learn new things, and
2. To increase my knowledge.

B. Intrinsic motivation to enjoy

Enjoyment is one of the traditional motivational factors of the tourism experience. This factor has been used by a number of tourism researchers (Loker & Perdue, 1992; Kozak, 2002; Kau & Lim, 2005; Kim & Prideaux, 2005). In the geotourism context, some studies have indicated that an enjoyment is an essential part of a geotourism experience (Joyce, 2006; Hose, 2008; Kim *et al.*, 2008; Dowling & Newsome, 2010).

In the context of this study, the researcher used two items to express this factor:

1. It is exciting, and
2. To have fun.

C. Intrinsic motivation to relax

Most of the tourist motivational studies recorded in the literature have employed a relaxation factor in their investigations (Crompton, 1979; Mannel & Iso-Ahola, 1987; Uysal & Jurowski, 1994; Ryan & Glendon, 1998; Hanqin & Lam, 1999; Lee, O'leary, Lee,

& Morrison, 2002; Hartley & Harrison, 2009; Jang & Cai, 2002; Kim & Jogaratnam, 2002). In this study, the researcher uses two items to enable this factor to be expressed:

1. To relax and rest, and
2. To refresh my mental and physical state.

D. Intrinsic motivation to experience sense of wonder

According to the geotourism literature, the feeling of wonder is considered a crucial factor in attracting tourists to undertake a geotourism experience. Geological characteristics have been a distinctive source of inspiration and arousal of the mind in creating literature, music, poetry and other human activities (Gordon, 2008). Pralong (2006) indicates that geotourism employs elements of the memories of the Earth's history, such as the natural sites and landscapes, as sources of imagination and emotion, favouring experience and passion. Kim *et al.*, (2008) used this factor in their study to assess the motivation of tourists undertaking a geotourism experience in Hwansun Cave (South Korea). The authors considered novelty motivation as the fourth dimension of their motivational domains, using three items to measure novelty: (seek novelty, get pleasure from adventure, and satisfy curiosity). The internal reliability for these items was high, Cronbach Alpha =.83. In the current study, the researcher adapted two items to assess the sense of wonder factor:

1. Because it is an exotic place, and
2. To explore new places.

E. Intrinsic motivation to escape

A plethora of studies has included escape from life's daily routine as stressors in the tourism motivation factors. The escape factor is represented as one of the central and crucial motivations in tourism literature as depicted in this statement by Johnston (cited in Dann, 1977, p. 185):

The greatest reason for travel can be summed up in one word, 'Escape': escape from the dull, daily routine; escape from the familiar, the commonplace, the ordinary; escape from the job, the boss, the customer, the commuting, the house, the lawn, the leaky faucets .

However, researchers have used the escape factor in different contexts and dimensions, such as escape from the hustle and bustle of daily life, escape from the surrounding environment, and escape from different stressors (Crompton, 1979; Iso-Ahola, 1982; Baloglu & Uysal, 1996; Jang & Cai, 2002).

In this study, the escape factor represented the desire of the tourist to escape from his/her daily life routine. One item was used to measure the escape factor:

1. To escape from the daily life routine

F. Intrinsic motivation toward friendship

The friendship factor has been applied in several motivation studies in the tourism literature: (Dann, 1977; Yuan & McDonald, 1990; Jamrozy & Uysal, 1994; Uysal & Jurowski, 1994; Oh, Uysal, & Weaver, 1995; Hanqin & Lam, 1999; You, O'Leary, Morrison, & Hong, 2000; Jang & Cai, 2002; Bogari, Crowther, & Marr, 2003; Kim, Jogaratnam, & Noh, 2006).

In the geotourism context, Kim *et al.*, (2008) investigated this factor within the socialization motivation dimension for tourists visiting the Hwansun Cave in Samchuk City, South Korea. Cronbach's Alpha for the socialization motivation was .77. However, in this study, two items were adapted to measure the friendship factor in a geotourism experience:

1. To meet people with similar interests and hobbies, and
2. To travel with friends and my family.

Extrinsic motivation

The items of extrinsic motivation included in this study were adapted from the Leisure Motivation Scale (LMS 28) developed by Pelletier *et al.*, (1991) (Appendix F). The 28-item leisure motivation scale measures the different types of motivations for individuals to engage in a leisure activity. This scale is based on the constructs of SDT - intrinsic motivation, extrinsic motivation and amotivation. In this scale participants responded to the item ‘Why do you generally do your leisure activities?’ It consists of three intrinsic motivation factors to know, to accomplish and to experience stimulation. LMS 28 consists of three extrinsic motivation factors: identified regulations, introjected regulations and external regulations. This scale includes 28 items with 4 items for each factor and is evaluated on a 7-point scale which ranges from 1 (does not correspond at all) to 7 (correspond exactly). The validity and reliability of LMS are good, the Cronbach Alpha of the factors of the subscales is between 0.76 to 0.90.

In this study, extrinsic motivation (EM) consists of six items measuring the three dimensions of extrinsic motivation:

Identified

1. Because it has many social, cultural and recreational advantages for me, and
2. Because I believe it is personally important to me to travel to the site

Introjected

1. In my life I need this type of tourism activity to be happy, and
2. I must be occupied with activities

External regulation

1. To show others that I am a distinct person, and
2. Because my family and friends tell me to do this activity.

Amotivation (AM)

The items of amotivation included in this study were adapted from the Leisure Motivation Scale (LMS 28) developed by Pelletier *et al.*, (1991) (Appendix F).

In this study, amotivation is measured using three items:

1. Not by choice; I do not care about this type of tourism activity
2. I do not really know; I don't think that this type of tourism suits me, and
3. Honestly, I do not know; I think that I wasted my time in this type of tourism activity.

The total items included in tourist motivations were adapted from the leisure motivation scale (LMS 28) (Pelletier *et al.*, 1991). The tourists at the four geosites were asked to respond to the item, "Why did you travel to the area today?" A five point Likert-scale was utilized by them to express the level of agreement with each motivation items, 1 (strongly disagree) to 5 (strongly agree).

- **The Basic Psychological Need Satisfaction (BPNS)**

The Basic Psychological Need Satisfaction (BPNS) of Deci & Ryan (2000) is considered one of the main constructs of SDT. It was used in the second section of the questionnaire to evaluate the state of the three basic needs - autonomy, competence and relatedness - with the respondents. Thus, the researcher adapted ten items from this scale, which has 21 items to make it applicable to the geotourism context. BPNS was measured by five point Likert scales ranging from 1 (not true) to 5 (true).

The BPNS scale has been applied by many researchers in different fields (Kasser, Davey & Ryan, 1992; Ilardi, Leone, Kasser, & Ryan 1993; La Guardia, Ryan, Couchman, & Deci, 2000; Deci, Ryan, Gagné, Leone, Usunov, & Kornazheva, 2001; Ntoumanis, (2005), Kashdan, Julian, Merritt, & Uswatte, 2006; Vlachopoulos & Michailidou, 2006; Vlachopoulos, 2008). The internal reliabilities of all the sub-scales in the 21-items of the BPNS were good in many studies in different domains. Thus, the Cronbach alphas for the BPNS for the work scale were .73 for competence, .84 for relatedness, and .79 for

autonomy (Deci *et al.*, 2001). The BPNS items for each of these scale dimensions are as follows:

Autonomy

1. That my choice of visiting this geosite is based on my true interests and values
2. Pressured at this place
3. That there is not much opportunity for me to decide for myself where I want to visit

Competence

1. That people I know tell me I am good at choosing tourist sites
2. That most times I feel a sense of accomplishment from what I do
3. That I have been able to learn interesting new skills

Relatedness

1. That people at this place were friendly towards me
2. That I like the people I am travelling with
3. A strong sense of intimacy with the people I spent time with
4. That the people I travel with do not seem to like me much.

- **Behavioural intention battery (BIB)**

The items of the BIB of tourists to revisit Crystal Cave, the Pinnacles, Wadi Rum and the Dead Sea were adapted from the Behavioural Intention Battery (BIB) (Zeithaml, Leonard and Parasauraman, 1996). The BIB included five dimensions loyalty to the company, propensity to switch, willingness to pay more, external response to a problem, and internal response to a problem. There are 13 items in this scale (Table 3.2). Several researchers have used this scale in different types of studies (Zeithaml *et al.*, 1996; (De Ruyter, Wetzels, & Bloemer, 1998; Bloeme, de Ruyter, & Wetzels, 1999; Yu & Dean, 2001; White & Yu, 2005).

The BIB has not escaped criticism from researchers. Although this scale is considered as the most holistic and significant ‘consumer behavioural intention construct’, it has a weakness in its reliability as a measure (White & Yu, 2005). Bloemer *et al.*, (1999) have stated there to be a real concern about the reliability of using a one-single item measure. Furthermore, they argue that, “the five factor solution does not appear to provide an unambiguous and consistent factor patterns”. However, the Cronbach Alpha for this scale is 0.90. Despite the weakness in its reliability measure, the BIB seems to be the most holistic ‘conceptualisation’ available for measuring the behavioural intentions constructs (White, 2005).

Table 3.2: The Items of Behavioural Intention Battery

Behavioural intention dimension	Items
Loyalty	Say positive things about XYZ to other people
	Recommend XYZ to someone who seeks your advice
	Encourage friends and relatives to do business with XYZ
	Consider XYZ your first choice to buy services
	Do more business with XYZ in the next few years
Switch	Do less business with XYZ in the next few years
	Take some of your business to a competitor that offers better prices
Pay More	Continue to do business with XYZ if its prices increase somewhat
	Pay a higher price than competitors charge for the benefits you?
External Responses	Switch to a competitor if you experience a problem with XYZ’s service
	Complain to other customers if you experience a problem with XYZ’s
	Complain to external agencies, such as consumer organizations, if you experience a problem with XYZ’s service
Internal Response	Complain to XYZ’s employees if you experience a problem with XYZ’s service

Source: Adapted from Zeithaml, Leonard & Parasauraman (1996, p.38)

In the current study, the researcher used 13 items from the behavioural intention battery. Although some limitations to this scale need to be acknowledged, the researcher used this scale because it has been applied by many previous researchers recorded in the tourism

literature (Baker & Crompton, 2000; Lee, Yoon, & Lee, 2007; González, Comesaña, & Brea, 2007; Zabkar, Brenc, & Dmitrovic, 2010).

The BIB (13 items) was measured in this study by five Likert scales, which ranged from 1 'extremely unlikely' to 5 'extremely likely'. The tourists were asked to answer this question:

How likely would you repeat your visitation to the geosite?

The BIB items used in this study involved these different measures:

Loyalty

1. Crystal Cave would be my first choice for my next holiday
2. I would recommend Crystal Cave to someone else
3. I would say positive things about my experience in Crystal Cave
4. I would encourage my family members, peers and friends to visit the Caves, and
5. I will visit Crystal Cave again in the next few years.

Switch

1. I would not visit Crystal Cave again in the next few years, and
2. I will visit another site that offers a different type of tourism experience.

Pay more

1. I would continue to visit Crystal Cave even if the price of its services increased somewhat, and
2. I would go to another tourism site that offers cheaper prices.

External response

1. I would switch to another place as I experienced a problem with the services at Crystal Cave
2. I would complain to other tourists if I experienced a problem with Crystal Cave services, and
3. I would complain to external tourism authorities if I experienced problems with Crystal Cave services.

Internal response

1. I would complain to Crystal Cave staff if I experienced any problem with the services

3.3 Selection of Study Sites

The major focus of this study is to explore the different types of motivation for tourists visiting a geosite. Despite the limitation of finance, time and logistical constraints in selecting a large number of study areas, the researcher decided to conduct this study in different types of geosites in different cultures, continents and countries. Therefore, the study was conducted at four sites in two countries Crystal Cave, Yanchep National Park and The Pinnacles, Nambung National Park in Australia, and Wadi Rum and the Dead Sea in Jordan. The criteria for selecting the study areas were based on conducting the study at a range of geosites (Table 3.3). The reasoning and the criteria behind selecting different sites for this study was to use a sample from various types of geosites which range from caves, natural lake to mountains. Thus, it enables investigation of tourists' motivation in different types of geosites. The selection of this range of types of geosites can enhance the variability in motivations to help detect significant differences and to enable an assessment of cross-cultural differences. Furthermore, this is reinforced by the selected targeted population of the study cohort being questioned was taken on-site at the four geosites (Figure 3.3).

Table 3.3: The Study Areas and Their Features

Study area	Location	Type of geosite	Features
Crystal Cave	Western Australia	Cave and karst formation	National Park
The Pinnacles	Western Australia	Sand dune and limestone pillars	National Park
Wadi Rum	Southern Jordan	Steep sandstone and granite mountains	World Heritage Site
The Dead Sea	Eastern Jordan	Terminal lake	The lowest spot on the earth

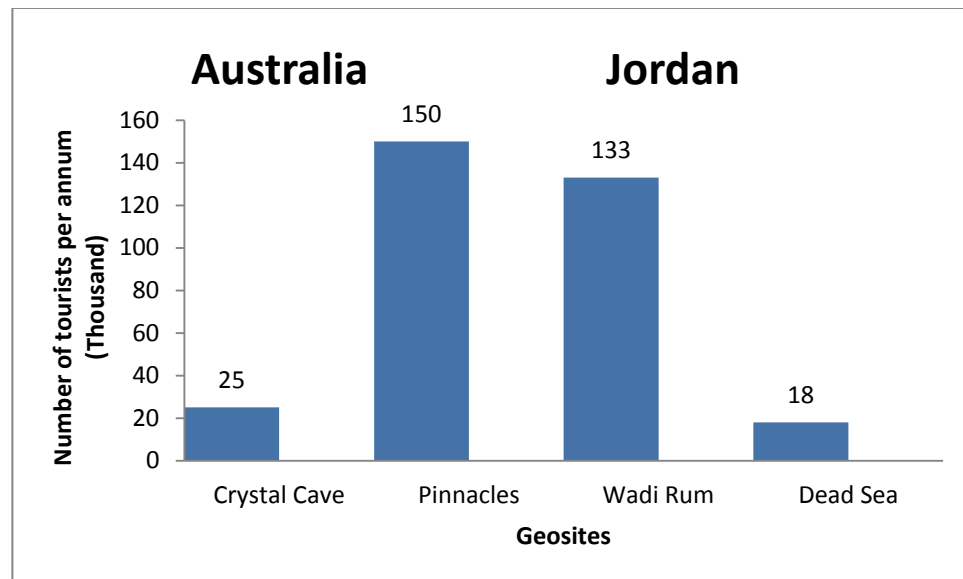


Figure 3.2: The annual visitation to the four sites in 2007. Based on (Australia Travel & Tourism Network, 2011), Perriam *et al.*, (2008), MOTA, (2009) and DEC (2010).

Australia

At 7.69 million square kilometres, Australia is considered the country with the sixth largest land area after Russia, Canada, China, the USA and Brazil. It is the largest island and smallest continent in the world (Clarke, 2002). According to Cooper and Hall (2005) Australia has many types of tourism attractions due its vast variations of unique geographic and natural features, society and culture. The list of World Heritage Sites in Australia consists of many cultural, natural and mixed sites Table (3.4). The main factor of the constant growth in the tourism industry in Australia in the last decades is the preference of the domestic and international tourists to experience the different unique cultural and natural environment in Australia (Jafari, 2003).

Table 3.4: The World Heritage Sites in Australia

Site	Date of entry
1.Cultural sites	
Australian Convict Sites	2010
Royal Exhibition Building and Carlton Gardens	2004
Sydney Opera House	2007
2.Natural sites	
Australian Fossil Mammal Sites (Riversleigh / Naracoorte)	1994
Fraser Island	1992
Gondwana Rainforests of Australia	1986
Great Barrier Reef	1981
Greater Blue Mountains Area	2000
Heard and McDonald Islands	1997
Lord Howe Island Group	1982
Macquarie Island	1997
Ningaloo Coast	2011
Purnululu National Park	2003
Shark Bay, Western Australia	1991
Wet Tropics of Queensland	1988
3.Mixed sites	
Kakadu National Park	1981
Tasmanian Wilderness	1982
Uluru-Kata Tjuta National Park	1987
Willandra Lakes Region	1981

Source: Adapted from UNESCO (2011)

Australia has a fertile geological and geomorphic heritage. It includes different kinds of karst, cave sites, inland deserts, tropical savannah, glacial and periglacial uplands, riverine plains, volcanic provinces and tectonic sites, rocks, and paleo-weathering landforms (Joyce, 2010).

3.3.1 Areas of study in Australia

This section describes the areas of study in Australia (Crystal Cave in Yanchep National Park and The Pinnacles in Numbung National Park).

3.3.1.1 Crystal Cave in Yanchep National Park

The Crystal Cave in Yanchep National Park is situated near Perth in Western Australia (Figure 3.3). The main caves in the Park, which are open for visitors, are Boomerang Cave, Crystal Cave and Cabaret Cave (DEC, 2011). Crystal Cave is considered a large cave because its length is more than 310 meters (English & Jasinska, 2003). It is believed that the caves in Yanchep National Park have been shaped by the deep growing of the Tuart tree roots in the ground to get the water from pools inside the caves (English *et al.*, 2000). According to the Department of Environment and Conservation (DEC) in Western Australia, Caves in Yanchep National Parks have three major values:

- Caves include important and unique kinds of fauna and flora.
- They have scientific and archaeological value.
- Caving is undertaken for both tourism and recreational activities (DEC, 2011).

The visitor experience in Yanchep National Park includes daily tours of Crystal Cave. Aboriginal cultural experiences on weekends and public holidays, natural walk trails and plenty of native fauna and flora in one of the oldest National parks in Western Australia, such as koalas and kangaroos. In addition, different picnic facilities are available in the site (DEC, 2010).

There are three main reasons for choosing this site. Firstly, the site contains more than 1000 caves and karst formation that have scientific value and include a broad scope of ‘habitats’. Secondly, according to the statistics, the Yanchep National Park has the highest number of tourists in the whole of WA, receiving more than 235,754 domestic and international

visitors per year (DEC, 2010). Thirdly, the caves have a wide range of geological and geomorphic features. Therefore, it is ideal for geotourism activities.

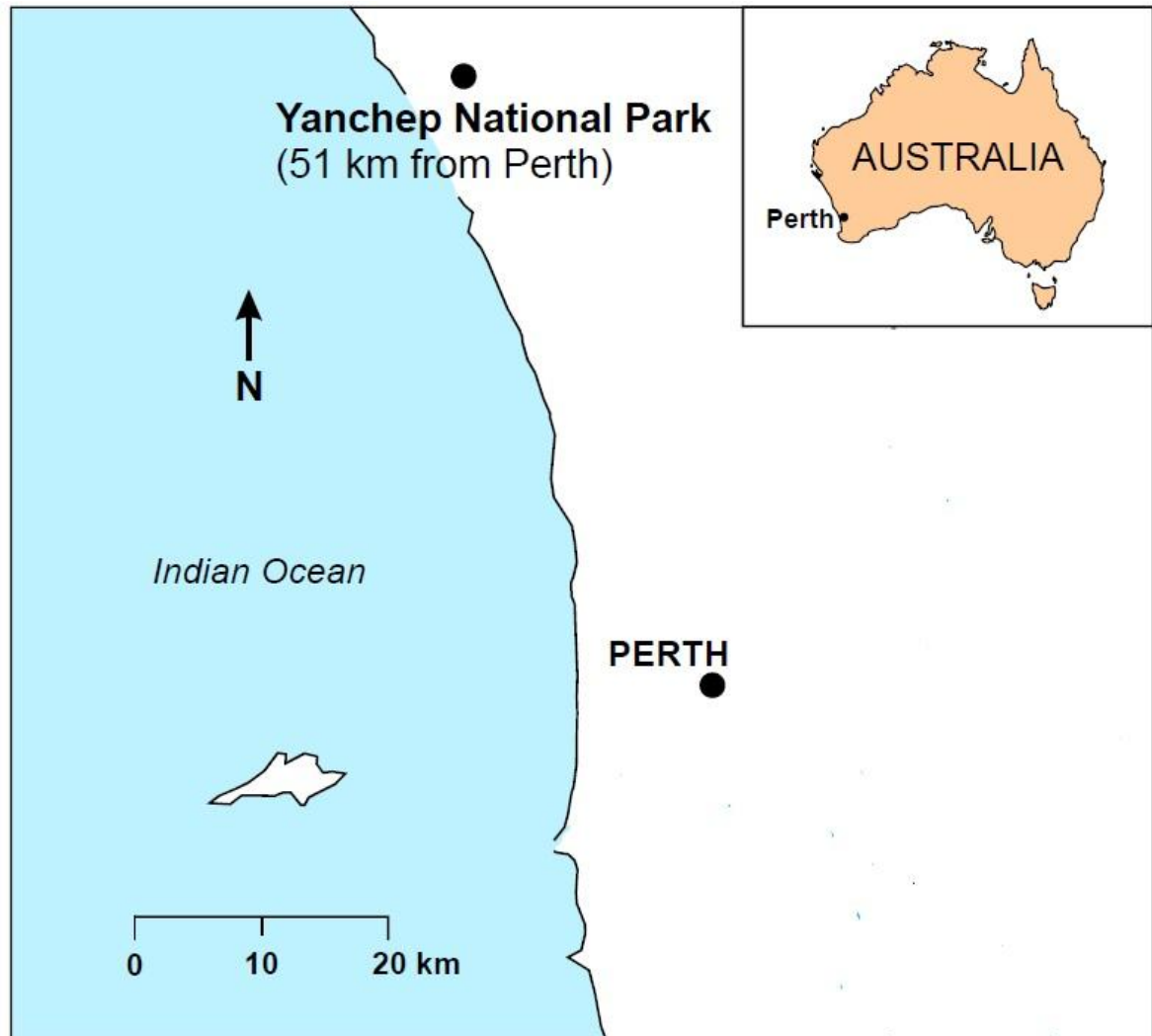


Figure 3.3: Location of Yanchep National Park. Adapted from Perriam, et al. (2008).

3.3.1.2. The Pinnacles, Nambung National Park

The Pinnacles are a combination of limestone formations, which are composed of wind-transported calcareous sand (Aeolian calcarenite). Nambung National Park includes thousands of limestone pillars (pinnacles) their height exceeding five metres (White, 2003). According to Lipar (2009), the Pinnacles are calcarenite towers, which cover 4-6 square kilometres. The Pinnacles have several forms - conical, mushroom, cylindrical, hollow with numerous peaks.

The Pinnacles are located 240 kilometers north of Perth in Western Australia. The Park has a rich diversity of landforms, flora and fauna. These include notable geological formations of limestone caves, sand dunes, distinctive pinnacles and other unique geological characteristics. The park area includes more than eight species of native mammals, 103 bird species, 17 reptile species and 3 frog species. There are also more than one hundred species of flora. The local culture reflects the influence of Aboriginal settlement and former European exploration (The Blue Region Tourism Organisation, 2010). DEC included the Pinnacles Desert in its national park list at the end of the 1960s. The site receives 150,000 international and domestic tourists annually (DEC, Nambung National Park, 2010). The Pinnacles Desert is considered a tourism icon for the whole of Western Australia and is utilized to promote nature-based tourism attractions in WA globally due to its unique geological features (Priskin, 2001).

The tourism experience in The Pinnacles involves “perceptions of naturalness, soundscape and viewscape” (Newsome, Dowling & Leung, (in press) p. 17).

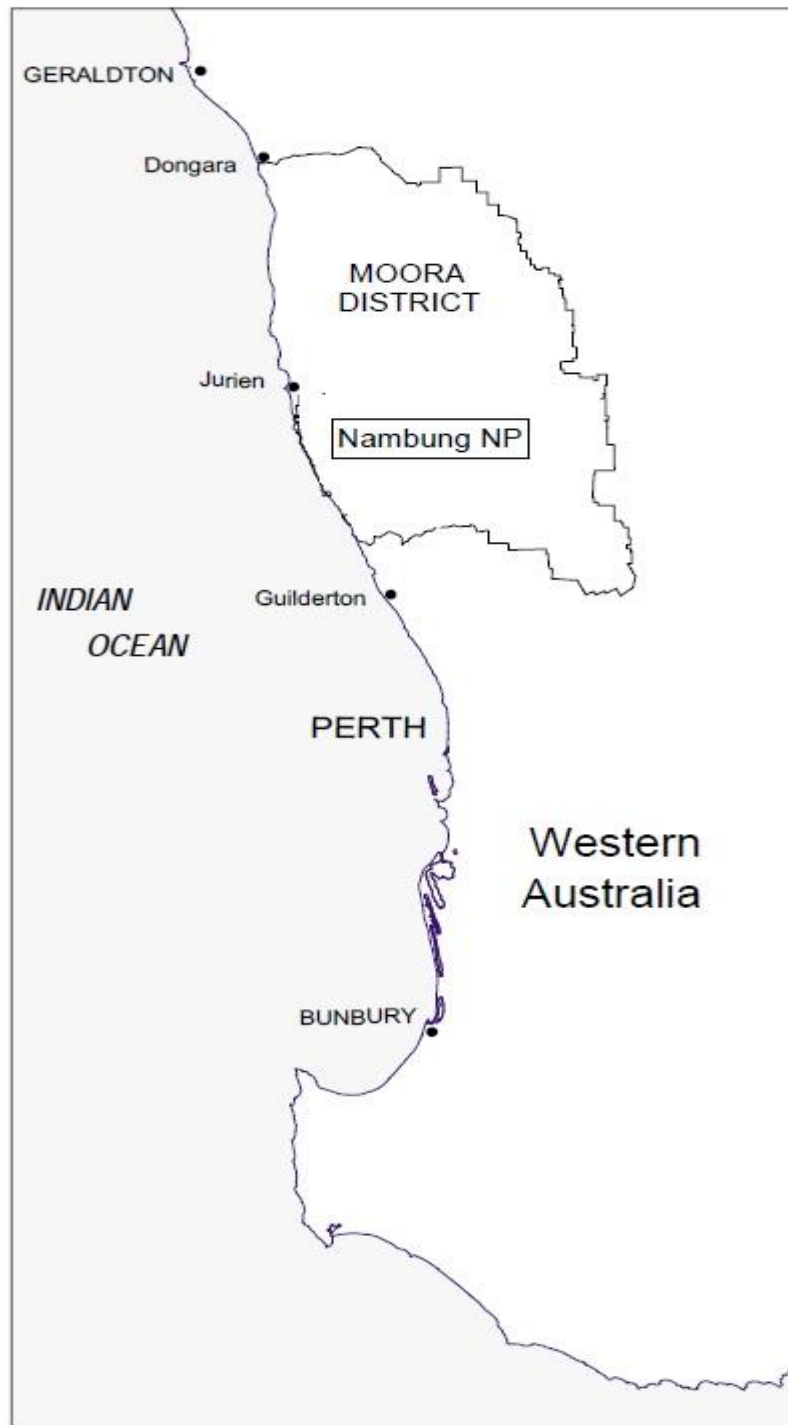


Figure 3.4: Location of Numbung National Park. Adapted from Department of Conservation and Land Management (1998, p. VI)

Jordan

Jordan is situated at the centre of the Middle East being at the point where the three continents Africa, Asia and Europe meet. Its bordering countries are Syria in the north, Saudi Arabia and the Red Sea to the south, Iraq and Saudi Arabia to the east and the state of Palestine to the west (Government of Jordan, 2011).

Jordan has an abundant historical and cultural heritage, including different types of human civilizations over history. The list of heritage and historical sites in Jordan includes Prehistoric sites, Petra, the Decapolis of Jerash (Gerasa), copious Roman and Byzantine sites, Mameluke, Ottoman, Jewish, Christian and Islamic archaeological sites (Rowan & Baram, 2004). Four sites in Jordan have been included as World Heritage Sites (Petra, Quseir Amra, Um er-Rasas (Kastron Mefa'a) and Wadi Rum) which represent 'outstanding universal value to humanity' (UNESCO, 2011).

The geological sites in Jordan have many unique features. First, Jordan is a holy place for the monotheists³, and the family of the books, which are mentioned in The Bible (Genesis 13:10). Secondly, Jordan has the lowest spot on the earth at minus 400 metres below the sea surface (JICA & MOTA, 1996).

3.3.2 Areas of study in Jordan

This section introduces the areas of study in Jordan (Wadi Rum and the Dead Sea).

3.3.2.1 Wadi Rum

Geologically Wadi Rum represents steep sandstone and Granite Mountains, which are separated from one another by horizontal passageways, overlaid in a ridge of sand dune. The height of Wadi Rum ranges from 800 to 1750 metres; they are the second highest mountains in Jordan (Evans, Amr, & AL-Oran, 2005). Wadi Rum includes 25,000 rock carvings with 20,000 inscriptions, which reflect the growth of human thinking and the initial evolution of the alphabet (UNESCO, 2011). Wadi Rum has been a film location for many international movies, such as the film, Lawrence of Arabia. It relayed how Lawrence

³ Monotheism : the doctrine or belief that there is only one God (Concise Oxford English Dictionary, Eleventh Edition)

operated in Jordan for the period of World War I and his political activities which were related to this area. The movie gained an academy award in 1962 (JICA & MOTA, 1996).

Due to the fragility of the environment of Wadi Rum, the Jordanian government declared it a protected area (National park) in 1978 (Brand, 2001). According to Ministry of Tourism and Antiquities (MOTA) in Jordan, 206,890 international and domestic tourists visited Wadi Rum in 2008, most of them being international tourists.

The uniqueness of the geology of Wadi Rum is based on the 'the presence of the precipitous sandstone and sedimentary rocks and varieties of distinctive plutonic granitoids of the late praterozoic age' (UNESCO, 2011). The World Heritage Committee of UNESCO added Wadi Rum to the World Heritage Sites list on June 25 2011 (UNESCO, 2011).

The major tourism activities in Wadi Rum are rock climbing, camel and horse trekking, hiking and camping (there are 28 desert campsites), guided four-wheel drive tours, ballooning, and camel rallies (UNESCO, 2011).



Figure 3.5: Map of location of Wadi Rum. Reprinted from Embassy of Jordan (2011)

3.3.2.2 The Dead Sea

Geologists have paid great attention to the Dead Sea for more than 150 years. Geologically, it covers a 1000 km. line from the northern Red Sea to the Taurus Mountains (Horowitz, 2001, p. 627). The Dead Sea has many unique geological features. Because the Dead Sea is approximately 400 meters below sea level (Figure 3.6), it is argued that its water is the most salty on the earth (31.5%). Historically speaking, the potential age of this unique sea is between 70,000 and 12,000 years (Bowen & Jux, 1987).



Figure 3.6: A Landsat 7 satellite image for the Dead Sea. Reprinted from National American Space Agency (2008)

According to the Jordan Tourism Board (2010), the major tourism attraction of the Dead Sea is the unique hot, relaxing, high salty water, which is ten times saltier than other seawater in the world. In addition, this water is full of important minerals such as, magnesium, sodium, potassium and bromine. Interestingly, this unique water attracted many famous people in ancient times, such as King Herod and Queen Cleopatra (Jordan Tourism Board, 2010).

Due to the nature of the Dead Sea as a terminal lake, it has a serious issue. The rate of the decline in the water level of the Dead Sea is almost one meter per year. Therefore, there are different potential projects to move water from the Red Sea to the Dead Sea (Pinsker, 2011).

The management of the Dead Sea offers many types of interpretation in the exhibition at the Dead Sea museum in Dead Sea Panoramic Complex. However, this permanent exhibition displays the different features of the Dead Sea, such as its geological, ecological, archaeological and historical characteristics. The Dead Sea exhibition consists of four sections: Origins of the Dead Sea, Eco-system, Man and the Dead Sea, and Will the Dead Sea Really Die? Panels, videos and different types of interpretation are used in the museum to provide clear ideas about the formation of the Dead Sea and to increase the awareness about the conservation efforts to save the Dead Sea. An intensive education program was conducted in the Dead Sea Panoramic Complex to explain and interpret the differences between the Dead Sea water and the fresh water for the students (RSCN, 2010). Experience the wonders of one of the most extraordinary natural and spiritual landscape in the world and recreation and beauty and wellness spa are main tourism activities in the Dead Sea (Jordan Tourism Board, 2011).



Figure 3.7: Location of the Dead Sea. Reprinted from Turner (2011)

3.4 Population of the research

The target population refers to a group of people or community. In this context it represents “a collective term used to describe the total quantity of cases of the type which are the subject of your study”, including actions, individuals, or things (Walliman & Baiche, 2001, p. 232). For the purpose of this study tourists were defined as temporary individuals or group of tourists aged 18 and above visiting Wadi Rum or the Dead Sea in Jordan, and Crystal Cave and the Pinnacles in Australia.

3.4.1 Sample

Choosing an appropriate sample is crucial for the success of any study. One important factor of sampling is identifying the size of the sample (Rossi, 2009). There is no common standard for size of a sample and this issue depends on the purpose of the research and the characteristics of ‘the population under scrutiny’. Moreover, the style of the study impacts the size of the sample that is suitable. Qualitative and ethnographic studies require a small sample, while quantitative studies need a larger sample, in particular with ‘inferential statistics’. In addition, cost, time, availability and the amount of heterogeneity of the population may also influence the size of the sample (Cohen, Manion, & Morrison, 2000, p. 93).

Due to financial considerations, time allocation and study feasibility, the chosen sample size was a total of 600 participants, which represents 300 respondents from each country. According to Smith (2010) it is reasonable to employ the positive relationship between the size of the chosen sample and the number of the items in the survey. Therefore, the chosen sample provides a ratio of minimum 1:4 or 1:5 (one question to four or five respondents). Other researchers, such as (Ryan, 1995), argue that the ratio should be no less than ten respondents per item. The total numbers of the items in the questionnaire of the current study is 49, thus the appropriate sample size would be at least 490 respondents.

According to Burns and Grove (2005, p. 351), “Convenience sampling is useful for descriptive and correlation studies conducted in new areas of research”. The researcher attempted to decrease the possibility of bias of the convenience sample and enhance the representative nature of the convenience sample in this study with a large number of subjects (N = 600) from different geosites, different cultures and countries. Additionally,

the researcher visited the geosites at different times of the day, weeks and months while attempting to obtain a representative mix of age cohort, gender and nationalities.

3.4.2 Sampling procedures

There are two types of sample; probability and non-probability. According to Lamb *et al.*, (2008, p. 253) in the case of probability samples “every element in the population has known statistical likelihood of being selected”. A random sample is an example of the probability sample. Within the context of the non-probability sample, little effort was made to obtain representatives of the various elements of the population. A form of this type of sample is the convenience sample.

Another way of sampling is representative sampling which allows the researcher to choose the sample purposely. Selection of the samples is based on a specific feature. The main benefit of this method of sampling is that the researcher ensures there to be common characteristics between the sample and the population from which this sample was drawn. Because of the large sample size, the researcher expected the sampling results to be similar to random sampling (Urdan, 2005).

The target population of this research are tourists aged 18 and above who visited, Wadi Rum and the Dead Sea in Jordan and the Crystal Caves in Yanchep National Park and the Pinnacles at Nambung National Park in Western Australia in 2010 and 2011. A non-probability convenience sample was selected from this population ($n = 600$).

In this research, an onsite intercept questionnaire was administered in Wadi Rum from October to December 2010; in the Dead Sea from August to October 2010; in Crystal Cave from January to February 2011; and in the Pinnacles from February to April 2011. The researcher found that the most convenient time to carry out data collection in Jordan was from August to December. Generally speaking, the peak tourism season in Jordan is April/May and September/October, which are considered to be the best times for tourists to visit that country (Ham, 2009). Autumn is one of the best times to visit Wadi Rum, in particular if the tourists intend to undertake climbing, hiking or other tourism activities (Howard & Taylor, 2008). October and November represented the peak tourism season in Wadi Rum in 2008-2009 and October is considered as one of the peak tourism times in the

Dead Sea (Table 3.5). The data were collected at the Panoramic Complex in the Dead Sea and at the visit centre in Wadi Rum.

Table 3.5: Monthly Number of Visitors to Wadi Run and the Dead Sea in 2008-2009

Month	2008		2009	
	Wadi Rum	The Dead Sea	Wadi Rum	The Dead Sea
January	7,929	840	11,263	1,932
February	10,920	724	9,988	1,044
March	19,573	1,706	18,633	2,170
April	25,701	2,148	26,239	2,359
May	20,576	1,106	17,978	1,371
June	11,318	383	7,321	746
July	8,762	527	871	715
August	17,505	832	8,736	1,046
September	16,621	189	14,667	883
October	27,209	1,948	27,083	1,986
November	23,727	1,381	18,302	2,202
December	17,049	921	9,967	1,485

Source: Adapted from Ministry of Tourism and Antiquities-Jordan (2010)

In Australia, data were collected from Crystal Cave in January and February 2011. An advantage of choosing this time was that it is a period of school and university holidays. According to DEC (2010) in WA, the nature of the visitation to Yanchep National Park is seasonal and related to the different school vacation times, Easter break, summer holidays, and weekends in the spring and summer.

As a general procedure, all the sampled tourists were asked to participate in the on-site questionnaire after the researcher had explained the nature and the objectives of the study. Based on their agreement, the tourists were given a copy of the questionnaire to complete and return when they left the geosite. Although the suggested completion time of the questionnaire was ten minutes, the respondents were left to complete the questionnaire at their leisure. All completed the questionnaire immediately and returned it to the researcher.

3.5 Data Analysis

Developments in information technology have revolutionized data analysis methods for both quantitative and qualitative research. There is a wide range of new software applications to support data analysis. In this study, the researcher used the software applications SPSS.

Quantitative analysis was performed by using SPSS 17.0 (statistical package for social sciences) for Windows. The data from the completed questionnaires were entered, checked and processed by the chosen statistical package. In the first stage of data analysis, the data collected from the four sites were checked for missing values, outliers and data entry errors. Descriptive characteristics of the respondents were then carried out by using frequencies and percentages in the package. This study used different types of statistical techniques as appropriate. Non-parametric methods were investigated to analyse the data, such as: frequencies and percentages, reliability analysis, and mean score; and parametric method, such as, linear regression analysis to test if there is a relationship (or not) between the tourists' motivation and their behavioural intention to revisit the geosite. In the next section, the researcher will explain the justification behind choosing the methods of data analysis.

3.5.1 Preliminary Data Analysis

This section includes the treatment and cleaning of the data before performing different types of data analysis, such as a linear regression analysis. List-wise deletion, case-wise test, the Durbin-Watson test, the test of normality, and multicollinearity test were performed to examine the data.

3.5.1.1 Missing data

The scales of the items in the study questionnaire did not provide an option to answer with 'not applicable', 'no answer' or 'I do not know'. Therefore, the data entry was left blank if some respondents made no answer to the required instrument question. These non-responses were treated as missing values by SPSS. According to Veal (2006), the "not

applicable” or “no answer” codes should be entered and then determined as missing values by the researcher.

In this study, list-wise deletion was used to treat the missing values in the data. According to Allison (2001) the list-wise deletion involves eliminating any cases, which have missing data on any variables in the targeted model first and then implementing conventional analysis methods to complete the data sets. He also identifies two benefits for list-wise deletion. On one hand, it can be utilized for all types of statistical analysis; on the other it does not require any particular computational methods. Hancock (2010) argues that list-wise deletion is the ideal choice for treating missing values if the rate of the lost cases to missing data is small, such as, below 10%.

3.5.1.2 Examining the data

After running preliminary data cleaning procedures to examine for missing values, the data were monitored for outlier tests, independence tests and tests of normality. According to Chen (2004), the validity of the linear regression analysis is based on three assumptions, which should be tested on the residuals - outliers test, independence test and normality test.

- **Outliers check**

Outliers are considered as extreme and unusual small or large values. A standardized value (Z) was employed to investigate the outliers in data being analysed. The Z score should not exceed ± 3 (Anderson, Sweeney, & Williams, 2008). In this study, the results of the case-wise diagnosis for the data indicate there to be no outliers in the data. The minimum and maximum values of standardized residual did not exceed ± 3 .

- **Check independence:**

The Durbin-Watson (DW) test was used to check independence and autocorrelation for the data. The autocorrelation represents a correlation between consecutive errors. If the range of values of DW is between 1.5 and 2.5, then there is no autocorrelation in the data. In essence, 0 represents a perfect positive correlation, whilst 4 is a perfect negative

correlation. If the DW is below 1.5, there is a positive correlation, whereas, if DW is greater than 4, the problem of negative correlation exists in the data (Prusty, 2010).

In this study, the independence assumption was satisfied in this data, DW values being between 1.5 and 2.5.

- **Test of normality**

The distribution of the residuals must be normal with a mean equal zero and a constant variance (Chen, 2004). The usage of a graphical test can be vital for investigating the distribution of this data. Thus, the histogram and normal probability plot can be used to illustrate the distribution of the data (Dytham, 2011). In the current study, the results showed that the collected data had a normal distribution.

In the light of the above discussion, Chatterjee & Hadi (2006) assert that, whilst a researcher conducts a regression analysis, it is crucial to detect any multicollinearity issues, which have a clear effect on the outcomes of a regression analysis. According to Lee *et al.*, (2000, P 701), “multicollinearity refers to the effect, on the precision of regression parameter estimates of two or more of the independent variables being highly correlated.” The variance inflation factor (VIF) and tolerance values (TOL) values are both often used to detect the level of multicollinearity in a regression model. VIF refers to the extent to which the estimated standard errors of regression parameter estimates were influenced by the linear relationship among the predictor variables. The multicollinearity among predictor variables is considered as an issue if VIF values are greater than 10 .

3.5.2 Justification for choosing the statistical analysis

The following justifications are put forward for using the different statistical methods of analysis in this study. The data was initially analysed to examine the profile characteristics of the chosen sample in the four sites and then by subgroups in the two countries which require descriptive analysis of the data (Table 3.6).The description involved exploring frequencies and percentages and the number of observations for every sub-study. However, the demographic variables have been investigated in the large body of literature, which pertains to the different studies in the social sciences. According to Pearce (2005, p. 42), the different personal demographic variables are not ‘peculiar’ to tourism studies as most of

the behavioural and social sciences studies have used demographic variables as fundamental descriptors. Thus, the researcher used the frequencies and percentages as measures in the descriptive analysis. Therefore the frequencies have included the frequency count of the number of times an event happens or the count of response; whereas the percentage is calculated from the number of occurrences or the count of responses as a part of the total (Harris, 2010).

In order to answer the research questions investigating tourist motivation, amotivation and tourist needs satisfaction, measures of central tendency, including mean and measures of variability, were used to measure the different variables in the study. In many cases, the mean score is the common statistical measure of the central tendency in data analysis (David & Sutton, 2004).

A correlation analysis was conducted among the study variables, motivations and behavioural intentions, to identify the relationship between them. However, the main purpose of conducting a person correlation in data analysis was to compute the extent and the direction of the linear relationship between two variables on one scale from 0 to 1 . Sharma indicates that correlation does not imply the causation, in other words, correlation analysis cannot determine whether the variable is the cause or the effect. Therefore, it was necessary to perform a regression analysis, which had the ability to identify the cause and effect relationship. Thus, the preferred data analysis method used in this study was a linear regression analysis, used to predict whether intrinsic motivation, extrinsic motivation and amotivation impact on the behavioural intention factors to repeat visitation to the chosen geosites. However, this study has treated the dimensions of extrinsic motivation as separate independent variables while intrinsic motivation has been treated as a unidimensional independent variable. The rational for this treatment is that the Deci and Ryan (1985, 1991) framework introduces extrinsic motivation as a divided concept and suggests different types of extrinsically motivated behaviours which range seriatim on the continuum varying from the higher to the lower self-determined behaviour dimensions: identification, introjection and external regulation (Baker, 2004).

The main objective of employing the linear regression analysis was to investigate the value of the dependent variable when impacting on the independent variable. It includes a mathematical expression to illustrate the casual emerging from a theoretical framework (Burns & Grove, 2005). It was assumed that the linear regression model between the variables could be in this form:

$$Y = \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_4 X_4$$

Y: The dependent variable

X: The independent variable (s), X is called the explanatory variable(s) because it explores the behaviour of the dependent variable in the model; it is considered as a constant term (X=.1)

β : the regression coefficient which is measured by using data on X and Y. It is also considered as the slope of the line in the regression model (Alexander, 2008).

According to Mark (1996, p. 265), the term reliability is generally understood to mean, “the extent to which a measuring instrument is stable and consistent”. One of the major reliability measures is the Cronbach Coefficient Alpha. This is a statistical measure, which is used to assess the internal consistency for a set of different items that was aggregated to make a single scale. It can express the “homogeneousness” of a scale (Fink & Litwin, 1995). In this study, the researcher applied the Cronbach Coefficient Alpha to measure the internal reliability of the different variables - intrinsic motivations, extrinsic motivations, amotivations, basic physiological needs satisfaction and behavioural intention battery.

Table 3.6: The Different Aims of Using the Statistical Analysis in This Study

Aim	Statistical Tool
Cleaning the data: treatment of the missing values in the data	List-wise deletion
Check outliers in the data	Case-wise diagnosis
Check independence	The Durbin-Watson test
Test of normality	The histogram and normal probability plot
Test of multicollinearity	The variance inflation factor (VIF) and tolerance values (TOL)
Measure the internal reliability	The Cronbach's Alpha
Describe the demographics of the sample in the four sites	Frequencies and percentages
Identify the source of information for the respondents	Mean and standard deviations
Identify the motivation, amotivation and need satisfaction for the respondents	Mean and standard deviations
Identify the relationship between the variables studied	A Pearson's bivariate correlation
Predict the relationship between the tourist motivations and amotivation with the behavioural intention to revisit the selected sites	A linear regression analysis

3.6 Pre-testing of the instrument

The pilot study is essential for the success of a questionnaire. It provides vital feedback on the language, format, and content of the different items of the questionnaire (Thomas, Nelson, & Silverman, 2005). The researcher conducted a pre-test study to improve the questionnaire and investigate the reliability of all its scales. It was administered to 100 tourists in Yanchep National Park, the nearest site of the study to the researcher. The outcome of this pilot study contributed to the final development of the questionnaire.

3.6.1 Sample size

The pilot study used a convenience sample of 100 domestic and international tourists. All of the participants were aged 18 years old and above. The pilot questionnaire was developed in the English language and was distributed by the researcher only to those who identified as a tourist and who wanted to participate in this project. The pilot questionnaire was implemented at a site at Crystal Cave in Yanchep National Park over five weekends in April and May 2010.

3.6.2 Pilot questionnaire design

The design of the questionnaire was based on the main constructs of the self-determination theory (SDT). The intrinsic motivation (IM) included eleven items. The extrinsic motivation (EM) consisted of six items and the amotivation (AM) included three items. The tourist motivations items were adapted from the literature and were modified to be appropriate for the nature of geotourism. For example, the researcher considered gaining knowledge and a sense of wonder as two types of intrinsic motivation because geotourism is based on “sense of wonder, appreciation and learning” (Dowling & Newsome, 2006, p. 4). A five point Likert-scale was utilized by respondents to express their level of agreement with each motivation items. The Likert scale ranged from 1 (strongly disagree) to 5 (strongly agree). The BPNS was used in the second section of the pre-tested questionnaire to evaluate the state of the three basic needs, autonomy, competence and relatedness, for the respondents. The researcher adapted ten items from this scale, which has 21 items. BNPS was measured by five Likert scales, which ranged from 1 (not true) to 5 (true). The behavioural intention battery (Zeithaml, Berry and Parasuraman, 1996) was then applied to measure the behavioural intention of the tourists to revisit Crystal Cave in the final section of the pre-tested questionnaire. The behavioural intention battery (13 items) was measured in this study by Likert-style five points scales, ranging from 1, extremely unlikely to 5, extremely likely (See Appendix A.2).

3.6.3 The outcome of the pilot study

The obstacles and limitations of conducting this pilot study should be acknowledged. Many tourists at Yanchep National Park visited the Park for recreation purposes to rest and relax at the edge of Yanchep Lake without visiting the Crystal Cave. The tourist is required to pay an entrance fees (AUD \$11, \$5 per motor cycle and concession cardholders, and \$5 per coach passenger [\$2 per senior passenger]) to enter the park, while the entry to Crystal Cave costs: adults \$10 per Adults; children (6 to 15 years) \$5 each; a mini group (two adults and two children) \$25; and Australian Seniors Card holders \$8 per person. The visit must be pre-booked and the tickets are available at the visitor centre. A Cave Tour commences each day at 10.30am, 11.30am, 1pm, 2pm, and 3pm (DEC, 2010). Therefore, most of the tourists (particularly domestic) prefer to stay at the barbecue area and enjoy the

lakeside view without visiting Crystal Cave. Another obstacle was that many tourists refused to complete the questionnaire and other tourists completed it rapidly without concentrating sufficiently on the answers. Moreover, many international tourists could not read and write in English language causing the exclusion of many potential international participants. The outcome of these obstacles could be that some values are missing. However, there were an insufficient number of missing values to cause a problem in this pilot study; those apparent were managed by a list-wise procedure.

Based on the results of the pilot questionnaire, a number of minor changes were introduced. First, some editorial changes were made to the questionnaire. Second, some modifications were made to the fourth question in the first section seeking general information. These were: (My nationality (ies) is (are)) to (My nationality is ...) because most of the respondents who answered this question had only one nationality. Another suggestion made was for the distribution of the questionnaire to take place adjacent to the main entrance of the cave because most of the visitors at the three picnic areas and the visitor centres in the Park did not visit the Cave. In addition, the suggested time for completion of the questionnaire was increased from 10 minutes to 15 minutes.

3.7 Limitations of the Study

A number of important limitations needed to be considered. Firstly, due to the high cost of travelling and accommodation, the researcher was restricted to undertaking the research at a limited number of sites. Thus, sampling was one of the main limitations of this study. Using a convenience sample in this study had some limitations related to the representativeness of the sample. Secondly, due to the novelty of geotourism, few academic sources of information and references were available to the researcher. Therefore, the lack of a sufficient tourism database is one of the limitations of this study.

3.8 Ethical Considerations

According to Bernard (2000) it should be noted that the largest dilemma in Social Sciences Research is not choosing the appropriate sample or identifying the suitable measurement techniques, but also in carrying them out ethically. Therefore, the researcher should bear the results of his actions. Bernard (2000, p. 21) also indicated that, “Ethics is part of method in science, just as it is in medicine or business, or any part of life”.

Prior to commencing the study, ethical clearance was granted from the Ethics Committee at Edith Cowan University. This study has followed the policies of Edith Cowan University for research ethics, namely, Conduct of Ethical Human Research. The researcher has also paid attention to the privacy and personal needs of the respondents and participants in the research.

3.9 Summary

Based on the appropriateness of applying either quantitative or qualitative research methods for this study, it was decided that the best method to adopt was quantitative methodology. The rationale behind the deployment of this approach is that there has been a large and growing body of literature, which has been used to investigate motivations, tourism motivations and SDT. Furthermore, this study employed a large sample of respondents as the research cohort.

The population of the current study included tourists who have visited at least one of two geosites in Jordan (The Dead Sea and Wadi Rum) and two geosites in Australia (Crystal Cave and The Pinnacles). The total size of the convenience sample in this study was 600 tourists, 300 from each country. The sample of the pilot study was 100 tourists at Crystal Cave. Taking into consideration the outcomes of the pilot study, the design of the questionnaire was based on the main constructs SDT, intrinsic motivation (IM), extrinsic motivation (EM) and amotivation (AM). The total instrument items were adapted from the literature and were modified to be appropriate for the nature of geotourism. The researcher applied the BIB (Zeithaml, Parasuraman, & Berry, 1996) to measure the behavioural intention of the tourists to revisit a geosite.

The statistical significance was analysed using a linear regression analysis. The Cronbach Alpha was conducted to assess the reliability of the all subscales of the questionnaire being good and acceptable. Frequencies, percentages and mean scores were also used to assist data analysis.

The next chapter presents the results of the data analysis for the four sites studied in Jordan and Australia.

CHAPTER FOUR - RESULTS

4.0 Introduction

The main objective of this study is to explore the different types of motivation, intrinsic motivation, extrinsic motivation and amotivation, for tourists engaging in a geotourism experience, and the potential relationship between these motivations and the behavioural intention to revisit a geosite. This study was conducted in Wadi Rum and the Dead Sea in Jordan and the Crystal Cave and The Pinnacles in Australia. The sites selected represented four distinctly different types of geosites: Wadi Rum is a sandstone and granite mountain; the Dead Sea is a lake, which represents the lowest point on the earth; Crystal Cave is a cave with many geological features; and The Pinnacles is a combination of limestone and sandstone pillars. A self-administered questionnaire was conducted at the four sites with the total sample size across all four sites being 600 participants - 300 from each country. The total number of the valid questionnaires at each site was as follows: 200 in Wadi Rum, 97 at the Dead Sea, 147 in The Pinnacles, and 141 in Crystal Cave. Data were entered for analysis into the software package SPSS (Statistical Package for the Social Sciences Version 17).

This chapter outlines the main results of this study. More specifically, it firstly reports the results for each of the four study areas separately and then compares the main findings for Jordan and Australia. The findings reported include the demographics of the tourists surveyed; their sources of information about the geosite prior to visiting the site; their motivations for visiting the chosen site; their psychological needs satisfaction; and the relationships between their behavioural intention to revisit and tourist motivations.

4.1 Results of the study in Jordan

This section reports the results of the research in Wadi Rum and the Dead Sea.

4.1.1 Results of the Study in Wadi Rum

4.1.1.1 Demographics

Demographic variables have been investigated in a large body of literature in different types of studies in social science. According to Pearce (2005, p. 42), the different personal demographic variables are not ‘peculiar’ to tourism studies and most of the behavioural and social sciences studies have used demographic variables as fundamental descriptors.

Of the 200 domestic and international tourists surveyed at Wadi Rum, 91 (45.5%) were female and 109 (54.5%) male. The largest group of respondents (68%) were aged 18-34 years. The 35-39 year olds represented the second largest group (20.5%) of respondents. The largest portion of the respondents had an undergraduate level education (38.5%), followed closely by postgraduate education (35.5%). One respondent only had a primary level education (5%). Regarding nationality, almost two-thirds of the respondents at Wadi Rum (66%) were from Jordan. Dutch tourists represented the main group of international respondents at Wadi Rum (13%) closely followed by the Syrians (10%). The other respondents were from a variety of locations including Asia, North America and other parts of Europe, and the Middle East (Table 4.1).

Table 4.1: The Demographics of the Respondents in Wadi Rum

Demographic Items	Value	Percent
Gender (n = 200)	Male	54.5%
	Female	45.5%
Age (Years) (n = 199)		
	18-34	68.0%
	35-39	20.5%
	40-49	8.0%
	50-59	3.0%
	60+	0.0%
Education (n = 197)		
	Primary	5.0%
	Secondary	24.0%
	Undergraduate	38.5%
	Post-graduate	35.5%
Nationality (n = 199)	Jordanian	66.0%
	Dutch	13.0%
	Syrian	10.0%
	Algerian	3.5%
	Palestinian	2.5%
	Iraqi	2.0%
	Lebanese	1.0%
	Saudi	1.0%
	British	1.0%
	American	1.0%
	Spanish	1.0%
	Kuwaiti	0.5%
	Qatari	0.5%
	Bahraini	0.5%
	Egyptian	0.5%
	Scottish	0.5%
	Australian	0.5%
	German	0.5%
	French	0.5%

4.1.1.2 Source of information

The respondents were asked if they sourced information about Wadi Rum before undertaking their trip. The researcher utilized a dichotomous scale (Yes/No) for the following question:

Did you source any information about Wadi Rum before visiting the site?

Moreover, the respondents were asked to name the main information source consulted before undertaking their trip to Wadi Rum. The list of the information sources included brochures, local tourist offices, state travel guides, magazines, newspapers, travel agents friends or relatives, and personal experience.

The results of the study in Wadi Rum revealed that 72 of the 198 people who responded (36.4%) indicated that they had sourced information about Wadi Rum the current visit. As shown in Figure 4.1, 48% of the respondents identified the Internet as the most frequent source of information to gain necessary information before their visit to the site, followed by brochures (12%), and then friends or relatives (9.5%). What is interesting in this data was that only one respondent had used the local tourist office to source information about Wadi Rum.

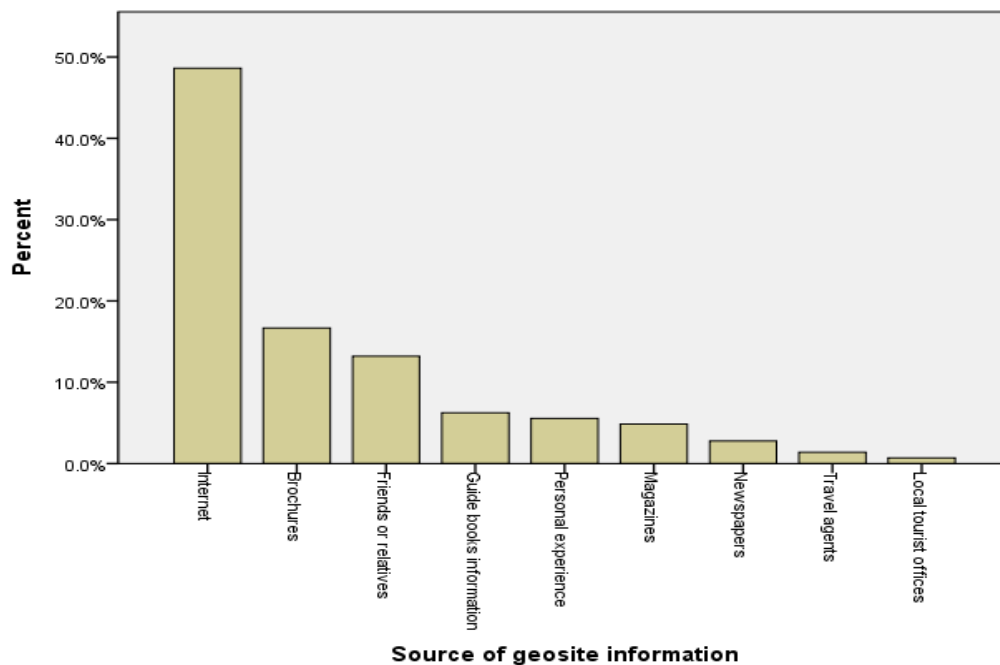


Figure 4.1: Sources of information for the respondents in Wadi Rum

4.1.1.3 Tourist motivation

This section aimed to investigate the different types of motivation, intrinsic motivation, extrinsic motivation and amotivation, of tourists undertaking a geotourism experience in Wadi Rum. The intrinsic motivation scale (IM) utilized in this research included 11 items comprising six measures: intrinsic motivation to gain knowledge; to enjoy, to relax, to experience a sense of wonder, to escape, and to seek friendship. The respondents were asked to respond to a series of statements, using a five point Likert-type scale, following this question:

Why did you travel to the Wadi Rum today?

The scale ranging from ‘strongly disagree’ (1) to ‘strongly agree’ (5) resulted in mean scores for intrinsic motivation ranging from the lowest 3.63 to the highest score 3.97. The responses to the items measuring the intrinsic motivation displayed a reasonable degree of variability with the standard deviations ranging between 1.05 to 1.20. The Cronbach Alpha of the intrinsic motivation scale was quite high at 0.90. This internal reliability measure was higher than that reported for cave tourism motivation in the prior research of Kim, Kim, Park, & Guo (2008) which ranged from 0.78 to 0.86. The main factors underpinning intrinsic motivation for visiting Wadi Rum were: sense of wonder (M=3.90, SD=1.12); relaxation (M=3.90, SD=1.11); enjoyment (M=3.89, SD=1.01); and knowledge (M=3.83, SD=1.01). The mean for the individual indicator items of the intrinsic motivation factors have been summarized in Table 4.2. The item ‘to explore new places’ which referred to the “sense of wonder variable” received the highest mean score of all the intrinsic motivation items (M= 3.97, SD= 1.15), whilst the item “To meet people with similar interests and hobbies” which related to friendship had the lowest mean score (M= 3.63, SD= 1.11).

Table 4.2: The Results of Intrinsic Motivation Measurement for the Respondents in Wadi Rum

Measures	Mean	SD	Number of responses (n = 200)
Knowledge	3.83	1.01	197
To learn new things	3.85	1.20	200
To increase my knowledge	3.82	1.19	197
Relaxation	3.90	1.11	197
To relax and rest	3.89	1.15	199
To refresh my mental and physical state	3.91	1.08	198
Escape	N/A	N/A	N/A
To escape from the daily life routine	3.92	1.12	198
Enjoyment	3.89	1.01	197
It is exciting	3.96	1.05	198
To have fun	3.83	1.15	197
Friendship	3.75	1.11	195
To meet people with similar interests and hobbies	3.63	1.11	197
To travel with friends and my family	3.88	1.11	196
Sense of Wonder	3.90	1.12	197
Because it is an exotic place	3.84	1.10	197
To explore new places	3.97	1.15	197

Concerning the extrinsic motivation scale participants responded to statements following the question ‘Why did you travel to Wadi Rum today?’ Extrinsic motivation (EM) included six items measuring the three factors of extrinsic motivation - identified, introjected and external regulation. A five point Likert-type scale was utilized, the numerical scores ranging from ‘strongly disagree’ (1) to ‘strongly agree’ (5).

The mean scores for extrinsic motivation ranged from 2.87 to 3.87. The standard deviations for the responses to the items measuring it ranged between 0.950 to 1.29 displaying a reasonable level of variability. The Cronbach Alpha internal reliability measure was acceptable as it ranged from 0.70 to 0.72. This is somewhat lower than the reliabilities reported for the original scale (LMS 28) which ranged from 0.76 to 0.90 .

The major extrinsic motivation factors were the identified as $M=3.71$ and $SD=1.17$, and for external motivation as $M=3.17$ and $SD=3.17$ (Table 4.3). Of the items measuring extrinsic motivations, “because it has many social, cultural and recreational advantages for me” (introjected) had the highest mean score, $M= 3.80$ and $SD= 1.15$; whereas, the item, “I must

be occupied with activities” (introjected) polled the lowest mean score, $M = 2.85$ and $SD = .0975$.

Table 4.3: Results of the Extrinsic Motivation Measurement for the Respondents in Wadi Rum

Measures	Mean	SD	Number of responses (n= 200)
Identified	3.71	1.17	197
Because it has many social, cultural and recreational advantages for me	3.80	1.15	200
Because I believe it is personally important to me to travel to the site	3.62	1.19	197
Introjected	2.85	0.975	196
In my life I need this type of tourism activity to be happy	2.87	1.00	197
I must be occupied with activities	2.84	.950	198
External regulation	3.17	1.27	197
To show others that I am a distinct person	3.12	1.29	198
Because my family and friends tell me to do this activity	3.22	1.26	198

The three items measuring the construct amotivation showed lower mean scores than the previous two forms of motivation. The average amotivation scores ranged from 2.09 to 2.69 (Table 4.4). Most of the tourists in Wadi Rum expressed their disagreement with the state of amotivation. The standard deviations of the items measuring amotivation ranged between 0.95 and 1.29. The amotivation subscale was lower than the desirable, 0.64 according to the Cronbach guidelines. This value was also lower than that reported for the amotivation subscale by which was 0.74. However, considering that the number of the amotivation subscale items was only three, the internal reliability rate was considered to be at an acceptable level. This conclusion accords with Kaplan and Saccuzzo (2008) who indicate that reliability of the scale increases as the number of items increases.

Table 4.4: The Results of Amotivation Measurement for the Respondents in Wadi Rum

Measures	Mean	SD	Number of responses (n = 200)
Not by choice; I don't care about this type of tourism activity	2.09	0.805	200
I don't really know; I don't think that this type of tourism suits me	2.40	.926	199
Honestly, I don't know; I think that I wasted my time in this type of tourism activity	2.69	1.28	195

4.1.1.4 Tourist needs satisfaction

The Basic Psychological Need Satisfaction (BPNS) of Deci and Ryan (2000) was used in this study to assess the state of the three basic needs, autonomy, competence and relatedness, for the respondents in Wadi Rum. BPNS was measured by Likert-type scales ranging in response from 1 'not true' to 5 'true'.

Table 4.5 illustrates the results of the extent of basic needs fulfilment, that is: autonomy, competence and relatedness, for the research cohort engaging in a geotourism experience at Wadi Rum. The mean score for their needs satisfaction ranged from 2.16 to 3.84. The standard deviations for the BNPS items ranged between 0.81 to 1.28. The Cronbach Alpha for the items, which measured the basic psychological needs satisfaction, was 0.77. These values were similar to those reported in the literature in which the BPNS scale has been used (Deci, Ryan, Gagné, Leone, Usunov, & Kornazheva, 2001) with its reliability ranging from 0.73 to 0.79. The highest mean score was for autonomy: 'That my choice of visiting this geosite is based on my true interests and values' with $M = 3.84$ and $SD = 1.08$; whereas, the related item, 'pressured at this place', had the lowest mean score: $M = 2.16$ and $SD = 1.02$.

Table 4.5: The Results of Basic Needs Satisfaction Measurement for the Respondents in Wadi Rum

Measures	Mean	SD	Number of responses (n = 200)
Autonomy	3.24	1.03	190
That my choice of visiting this geosite is based on my true interests and values	3.84	1.08	194
Pressured at this place	2.16	1.02	193
That there is not much opportunity for me to decide for myself where I want to visit	3.72	1.01	194
Competence	3.37	1.17	189
That people I know tell me I am good at choosing tourist sites	3.75	1.08	193
That most times I feel a sense of accomplishment from what I do	3.09	1.25	193
That I have been able to learn interesting new skills	3.28	1.18	192
Relatedness	3.33	1.20	190
That people at this place were friendly towards me	3.49	.990	193
That I like the people I am travelling with	3.53	1.11	191
A strong sense of intimacy with the people I spent time with	3.11	1.39	192
That the people I travel with do not seem to like me much	3.22	1.31	192

4.1.1.5 The relationship between tourist motivation and behavioural intention for a repeat visit to Wadi Rum

Pearson's bivariate correlations between the different motivational types, intrinsic motivation (IM) identified extrinsic motivation (EMID), introjected extrinsic motivation (EMIN), external regulations of extrinsic motivation (EXER) and amotivation (AMOT), and behavioural intention measures: loyalty, switch, pay more, external response and internal response, were conducted to check the intercorrelations between these constructs.

The results revealed the patterns of correlations amongst the various motivation variables to be most significant at $p < .01$, ranging from very strong $r = 0.78$ to weak and non-significant $r = 0.16$. The results also showed the strongest correlation to be between IM and EMID $r = 0.78^{**}$, while the weakest but significant correlation was between (EMIN-AMOT, $r = 0.17$ and EMIN-EMER, $r = 0.31^{**}$), and the non-significant correlations (IM-AMOT, $r = 0.16$ and EMID-AMOT, $r = 0.17$).

The results showed that the patterns of correlations amongst the five behavioral intentions measure were all significant at $p < .01$ ranging from very strong $r = 0.65$ to strong and $r = 0.47^{**}$. The results revealed that the strongest correlation was between loyalty-external responses $r = 0.65^{**}$, whereas, the lowest correlation was between pay more and internal response $r = 0.47^{**}$.

In the context of the intercorrelations between the different motivations and the behavioural intention measures, the results showed that they ranged from strong $r = 0.53^{**}$ to non-significant $r = 0.01$. The results showed that most consistent and strongest correlations were between the intrinsic motivation and the extrinsic motivation of loyalty. The strongest correlations were between IM $r = 0.53^{**}$, EMID $r = 0.50^{**}$ with loyalty. The non-significant correlation was between AMOT with loyalty $r = 0.04$ and pay more $r = 0.04$. Moreover, IM $r = 0.01$, EMID $r = 0.03$ and EMIN $r = 0.02$ were not significantly correlated with switch. IM was weakly correlated with external response $r = 0.04$ and internal response $r = 0.07$.

Taken together, the results revealed that the most statistically significant positive correlations were found between the highest self-determined motivations (intrinsic motivation and identified extrinsic motivation) and the less self-determined motivations (amotivation and external regulations of extrinsic motivation). The most statistically weak and non-significant correlations were found between relatively contrary constructs, such as intrinsic motivation and amotivation (Table 4.6).

Table 4.6: The Correlations between the Study Variables/ Wadi Rum

Variables	Loyalty	Switch	Pay more	External Response	Internal response	IM	EMID	EMIN	EMER	AMOT
Loyalty	-	.53**	.62**	.65**	.52**	.53**	.50**	.20**	.33**	.04
Switch		-	.55**	.61**	.48**	.01	.03	.02	.33**	.16*
Pay more			-	.57**	.47**	.38**	.46**	.08	.40**	.04
External Response				-	.49**	.04	.06	.05	.30**	.22**
Internal response					-	.07	.04	.28**	.20**	.28**
IM						-	.78**	.52**	.46**	.16
EMID							-	.42**	.50**	.17
EMIN								-	.31**	.28**
EMER									-	.50**
AMOT										-
Mean	17.96	6.44	6.49	9.73	3.39	42.51	7.42	5.71	6.35	8.73
S.D	4.69	2.17	1.93	3.09	1.27	8.79	2.00	1.43	2.20	3.20

Note: IM = intrinsic motivation, EMID = identified extrinsic motivation, EMIN = introjected extrinsic motivation, EMER = external regulation of extrinsic motivation, AMOT = amotivation.

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

A series of linear regression analyses were conducted to examine the relationships between tourist motivations, namely, intrinsic, extrinsic and amotivation, and the behavioural intention of tourists to revisit Wadi Rum. The dimensions of behavioural intention that are loyalty, switch, pay more, external response and internal response, served as the dependent variables, whilst intrinsic motivation, extrinsic motivation (identified, introjected and external regulations) and amotivation were the independent variables. However, this study

has treated the dimensions of extrinsic motivation as separate independent variables whilst intrinsic motivation has been treated as single unidimensional independent variables (section 3.5.2/ methodology chapter).

In relation to the loyalty measure, the results of the regression analysis indicated that IM ($\beta_o=.35$, $p<.001$) and EMID ($\beta_o=.21$, $p<.001$) were significant predictors of loyalty. The overall model explained 35% of variance in loyalty, which was revealed to be statistically significant, $F(5.12) = 13.69$, $p < .001$; whereas, AMOT ($\beta_o = .02$, $p<.001$), EMIN ($\beta_o = -.08$, $p<.001$) were weak and negative predictors for loyalty.

The results of examination of beta coefficients indicated that IM ($\beta_o=.02$, $p<.001$) was a weak predictor for switch measure. The overall model explained 18% of variance in switch, which was revealed to be statistically significant, $F(5.17) = 7.99$, $p < .001$; whilst, AMOT at ($\beta_o=.20$, $p<.001$) was a significant predictor for switch.

In the terms of the 'pay more' measure, the results of regression analysis revealed that EMID ($\beta_o=.36$, $p<.001$) and EMIN ($\beta_o=.21$, $p<.001$) were significant predictors for pay more. The overall model explained 28% of variance in the pay more measure, which was revealed to be statistically significant, $F(5.17) = 14.25$, $p < .001$; whereas, EMIN ($\beta_o = -.21$, $p<.001$) was weak and a negative predictor for switch.

Extrinsic motivations measures EMID, EMIN, EMER were negative and weak predictors for the external response measure. Their beta coefficients were .08, -.20, .01 respectively. The overall model explained 20% of variance in external response, which was revealed to be statistically significant, $F(5.17) = 8.94$, $p < .001$. IM ($\beta_o=.29$, $p<.001$); while AMOT ($\beta_o=.28$, $p<.001$) proved to be good predictors for external response.

Most of the motivational types were good predictors for internal response measures. The overall model explained 12% of variance in internal response, which was revealed to be statistically significant, $F(5.17) = 4.87$, $p < .001$. Only EMIER ($\beta_o=.03$, $p<.001$) was a weak predictor for internal response (Table 4.7).

Table 4.7: The Results of the Regression Analysis between Tourist Motivations and the Behavioural Intention of Tourists to Revisit Wadi Rum

	Regression Equations														
Independent Variables	Loyalty			Switch			Pay more			External response			Internal response		
	B _u	S.E.	β _σ	B _u	S.E.	β _σ	B _u	S.E.	β _σ	B _u	S.E.	β _σ	B _u	S.E.	β _σ
Intercept	7.03	1.63	-	3.19	.81	-	.303	.670	-	4.31	1.16	-	1.81	.494	-
Intrinsic Motivation	.18	.05	.35	.06	.81	.02	.01	.02	.07	.10	.04	.29	.02	.017	.14
Identified External Motivation	.49	.24	.21	.15	.02	.14	.35	.10	.36	.13	.17	.08	.14	.07	.21
Introjected External Motivation	-.28	.23	-.08	.34	.12	.11	.28	.09	-.21	-.43	.16	-.20	.14	.07	.16
External Regulation	.10	.19	.19	.06	.09	.09	.13	.08	.15	.01	.13	.01	.18	.05	.03
Amotivation	.03	.11	.02	.12	.05	.20	.10	.04	.16	.26	.08	.28	.67	.03	.17
F-statistic (df)	F(5.17)=13.99			F(5.17)=7.99			F(5.17)=14.25			F(5.17)=8.94			F(5.17)=4.87		
p-value	.000			.000			.000			.000			.000		
R²	.29			.18			.28			.20			.12		
Adj. R²	.27			.16			.26			.17			.09		
N	181			183			181			183			181		

Note: B_u = unstandardised beta coefficient; S.E. = standard error of beta, β_s = standardised beta coefficient

*p<.05; **p<.01

4.1.2 Results of the study of the Dead Sea in Jordan

4.1.2.1 Demographics

Ninety-seven international and domestic tourists were surveyed at the Dead Sea. Of the initial cohort of 97 tourists, 40.2% were female and 59.8% male (Table 4.8). The largest group of respondents were aged 18-34 and 35-39 years old group represented only 21.6% of respondents. The largest percentage of the respondents had secondary education, 34%, which compares favourably with 31% of them having an undergraduate level education. Most of the research cohort at the Dead Sea attractions were domestic tourists, (66%) of them being from Jordan. The main international tourists at the Dead Sea were from the Netherlands (9%). The proportions of intraregional tourists were Syrian (6.2%), Palestinian (6.2%) and Saudi Arabians (2.1%). Other tourists originated from variety of countries in Asia, Europe, North America and the Middle East.

Table 4.8: Demographic variables of the respondents at the Dead Sea

<i>Demographic Items</i>	<i>Value</i>	<i>Percent</i>
Gender (N = 97)	Male	59.8%
	Female	40.2%
Age (Years) (N = 97)	18-34	63.9%
	35-39	21.6%
	40-49	12.4%
	50-59	1.0%
	60+	1.0%
Education (N = 96)	Primary	0.0%
	Secondary	20.6%
	Undergraduate	45.4%
	Post-graduate	33.3%
Nationality (N = 96)	Jordanian	66.0%
	Dutch	9.3%
	Syrian	6.2%
	Palestinian	6.2%
	Filipino	2.1%
	American	2.1%
	Saudi	2.1%
	German	2.1%
	British	1.0%
	Iraqi	1.0%
	Bahrain	1.0%

4.1.2.2 Source of information

In relation to the question, ‘did you source any information about the Dead Sea before visiting the site?’ it was found that the majority of the respondents had chosen at least one information source about the Dead Sea before undertaking the trip. Respondents (67%) were positive about their usage of the information source about The Dead Sea, whereas 32% were negative.

The respondents were asked to identify the source of information used to gain information about the Dead Sea, revealing that 58.5% of them had used the Internet as the most frequent source of information. The second source of information, 12.3%, was their friends or relatives (Figure 4.2).

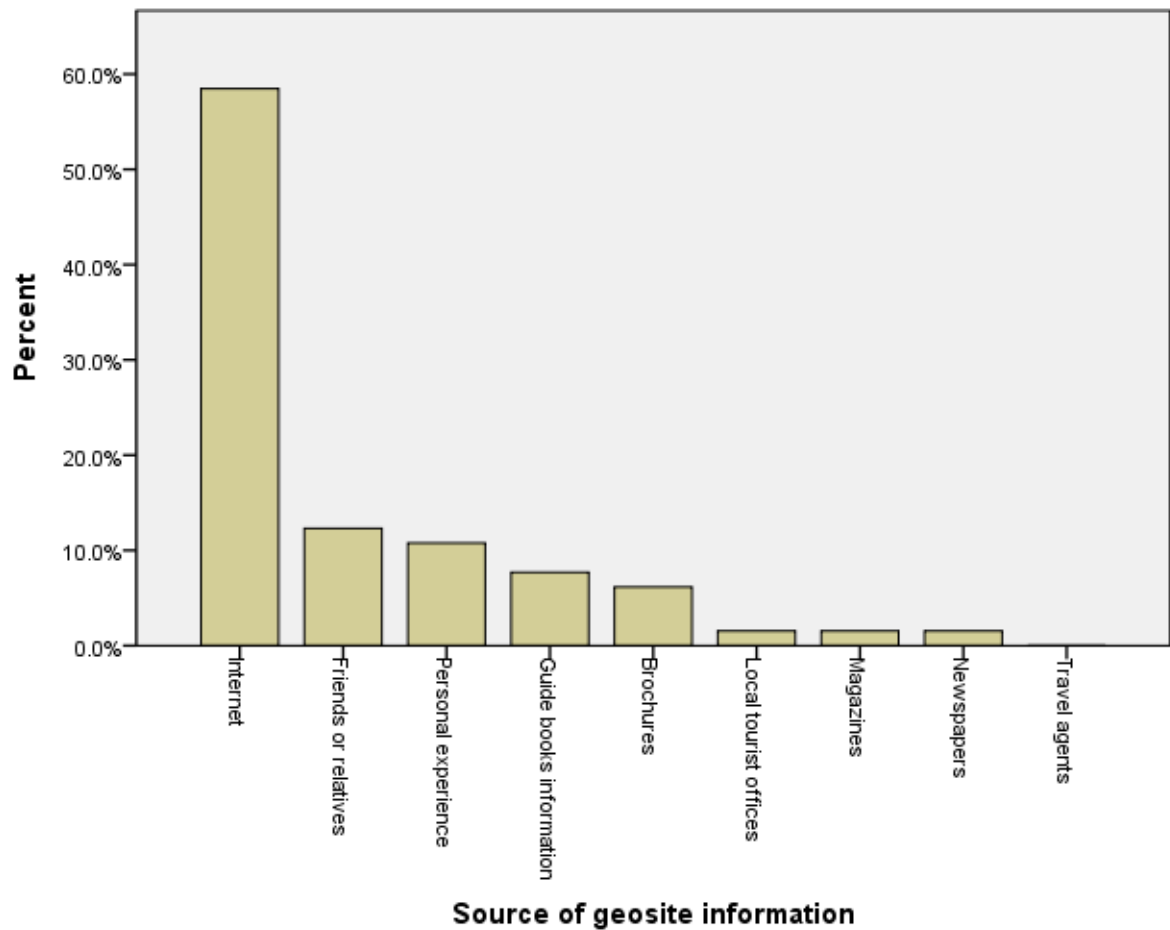


Figure 4.2: Sources of information for the respondents in the Dead Sea

4.1.2.3 Tourist motivations

This component of the thesis identifies the motivations, intrinsic motivation, extrinsic motivation and amotivation, of tourists engaging in a geotourism experience in the Dead Sea.

Table 4.9 shows the mean scores and standard deviations of the intrinsic motivation variables, namely, knowledge, relaxation, escape, enjoyment, friendship, and sense of wonder, for the research cohort at the Dead Sea. The mean scores of the intrinsic motivation ranged from the lowest mean score 3.40 to the highest, 4.06. The standard deviations for the items measuring the intrinsic motivation for the respondents at the Dead Sea ranged between 1.01 and 1.20. The Cronbach Alpha for the items measuring intrinsic motivation was good 0.83. The main factors of intrinsic motivation behind visiting the Dead Sea were to ‘escape from the daily life routine’ (M= 4.01, SD= 1.01), ‘enjoyment’ (M= 3.90, SD= 1.09), ‘relaxation’ (M= 3.84, SD= 1.11) and ‘sense of wonder’ (M= 3.78, SD= 1.09). In terms of individual items measuring intrinsic motivation, the item, ‘To relax and rest’ (relaxation) scored highest (M= 4.06, SD= 1.01); whereas, the item ‘to escape from the daily life routine’ (escape) had the lowest mean score (M= 4.01, SD= 4.01).

Table 4.9: The Results of the Intrinsic Motivation Measurement in the Dead Sea

Measures	Mean	SD	Number of responses (n = 97)
Knowledge	3.59	1.21	95
To learn new things	3.49	1.30	97
To increase my knowledge	3.69	1.12	95
Relaxation	3.84	1.11	96
To relax and rest	4.06	1.01	97
To refresh my mental and physical state	3.63	1.21	96
Escape	N/A	N/A	N/A
To escape from the daily life routine	4.01	1.01	97
Enjoyment	3.90	1.09	95
It is exciting	3.93	1.09	95
To have fun	3.88	1.10	95
Friendship	3.52	1.19	94
To meet people with similar interests and hobbies	3.40	1.18	94
To travel with friends and my family	3.64	1.20	95
Sense of Wonder	3.78	1.09	95
Because it is an exotic place	3.81	1.06	95
To explore new places	3.76	1.13	95

The results in Table 4.10 depict the extrinsic motivations, identified, introjected and external regulation, for the respondents undertaking this geotourism experience at the Dead Sea. The mean score of the six items determining extrinsic motivation ranged from 2.92 to 3.63. The standard deviation for the items measuring the extrinsic motivation at the Dead Sea ranged from 1.04 to 1.28. The results revealed some values in the data to be missing. The internal consistencies for the extrinsic motivation items ranged from 0.70 to 0.73. The main motivating factors behind the cohort's visiting the Dead Sea were identified: extrinsic motivation (M= 3.61, SD= 2.39), and external regulations of extrinsic motivation (M= 3.08, SD= 1.27). The questionnaire item, 'Because it has many social, cultural and recreational advantages for me' had the highest mean score for the items measuring extrinsic motivation (M= 3.60, SD= 1.15), while the item, 'I must be occupied with activities' scored the lowest mean (M= 2.92, SD= 1.04).

Table 4.10: The Results of the Extrinsic Motivation Measurement at the Dead Sea

Measures	Mean	SD	Number of responses (n = 97)
Identified	3.61	2.39	96
Because it has many social, cultural and recreational advantages for me	3.60	1.15	97
Because I believe it is personally important to me to travel to the site	3.63	1.24	96
Introjected	3.02	1.11	95
In my life I need this type of tourism activity to be happy	3.13	1.19	95
I must be occupied with activities	2.92	1.04	97
External regulation	3.08	1.27	94
To show others that I am a distinct person	3.10	1.26	95
Because my family and friends tell me to do this activity	3.07	1.28	95

As depicted in Table 4.11, the mean scores for the three items of the amotivation factor ranged from 1.95 to 2.31. The amotivation item, ‘Not by choice; I do not care about this type of tourism activity’, scored the lowest mean among the three items (M= 1.95, SD= .802). The standard deviations ranged between 1.04 and 1.28. The internal reliability for the three amotivations items was 0.68.

Table 4.11: The results of amotivation measurement

Measures	Mean	SD	Number of responses (n = 97)
Not by choice; I don’t care about this type of tourism activity	1.95	.802	97
I don’t really know; I don’t think that this type of tourism suits me	2.31	1.05	97
Honestly, I don’t know; I think that I wasted my time in this type of tourism activity	2.14	1.10	95

4.1.2.4 Tourist needs satisfaction

This section describes the results obtained after application of the BPNS on autonomy, competence and relatedness of the respondents engaging in a geotourism experience at the Dead Sea. The mean score of the tourist needs satisfaction ranged from 2.32 to 3.63. The standard deviations ranged between 1.00 and 1.25. The Cronbach Alpha for the items measuring the BPNS was acceptable 0.71.

Of the three basic needs satisfaction, competence had the highest mean score ($M = 3.37$, $SD = 1.15$), followed by relatedness ($M = 3.08$, $SD = 1.15$). The item, ‘that people I know tell me I am good at choosing tourist sites’, related to the competence factor, had the highest mean score ($M = 3.67$, $SD = 1.00$), but few respondents agreed with the item, ‘pressured at this place’ ($M = 2.32$, $SD = 1.14$).

Table 4.12: The Results of Basic Needs Satisfaction Measurement

Measures	Mean	SD	Number of responses (n = 97)
Autonomy	2.93	1.14	93
That my choice of visiting this geosite is based on my true interests and values	3.63	1.09	94
Pressured at this place	2.32	1.14	94
That there is not much opportunity for me to decide for myself where I want to visit	2.85	1.20	94
Competence	3.37	1.15	93
That people I know tell me I am good at choosing tourist sites	3.67	1.00	94
That most times I feel a sense of accomplishment from what I do	3.35	1.25	94
That I have been able to learn interesting new skills	3.11	1.21	94
Relatedness	3.08	1.15	93
That people at this place were friendly towards me	3.42	.940	95
That I like the people I am travelling with	3.49	1.06	93
A strong sense of intimacy with the people I spent time with	2.93	1.31	93
That the people I travel with do not seem to like me much	2.50	1.30	94

4.1.2.5 The relationship between tourist motivation and behavioural intention to repeat the visit the Dead Sea

A Pearson correlation analysis was conducted to check the intercorrelations among the different study variables. The results showed the patterns of intercorrelations amongst the motivations variables to be most significant at $p < .01$; they ranged from strong $r = .63^{**}$ to weak and non-significant $r = .00$. Furthermore, the results revealed that the strongest correlation was between IM and EMID $r = 0.63^{**}$, whereas the weakest non-significant correlations were between EMIN-AMOT, $r = .00$ and IM-AMOT, $r = 0.04$.

The results showed that the patterns of correlations amongst the five behavioral intentions measures were most significant at $p < .01$. They ranged from strong $r = 0.64^{**}$ to medium r

= 0.27**. The results revealed that the strongest correlation was between switch-external responses $r = 0.64^{**}$, while, the lowest correlation was between loyalty and switch $r = 0.27^{**}$.

The intercorrelations between the different motivations and the behavioural intention measures showed that they ranged from strong $r = 0.46^{**}$ to negative and non-significant $r = -0.08$. The results also showed that most consistent and strongest correlations to be between the IM $r = .46^{**}$ and EMID $r = .46^{**}$ for loyalty. The non-significant correlation was between AMOT with loyalty $r = -0.08$, EMIN with switch $r = -0.06$, and EMIN with internal response $r = -.08$ (Table 4.13).

Table 4.13: The Results of the Correlations between the Study Variables/ the Dead Sea

Variables	Loyalty	Switch	Pay more	External Response	Internal response	IM	EMID	EMIN	EMER	AMOT
Loyalty	-	.27**	.46**	.32**	.22*	.35**	.46**	.46**	.22*	-.08
Switch		-	.43**	.64**	.52**	.35**	.191	-.06	.40**	.32**
Pay more			-	.42**	.32**	.35**	.45**	.27**	.39**	.24**
External Response				-	.49**	.25*	.14	.05	.27*	.31**
Internal response					-	.26*	.04	-.08	.49**	.09
IM						-	.63**	.39**	.38**	.04
EMID							-	.45**	.41**	.00
EMIN								-	.21*	.14
EMER									-	.49**
AMOT										-
Mean	17.82	6.26	6.32	9.57	3.38	41.29	7.23	6.05	6.15	7.12
S.D	4.01	1.90	1.63	2.89	1.25	7.61	2.04	1.81	2.12	2.51

Note: IM = intrinsic motivation, EMID = identified extrinsic motivation, EMIN = introjected extrinsic motivation, EMER = external regulation of extrinsic motivation, AMOT = amotivation.

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

A series of linear regression analyses was conducted to examine the relationships between the tourist motivations, intrinsic, extrinsic and amotivation, and the behavioural intention of tourists to revisit the Dead Sea. The dimensions of behavioural intention, loyalty, switch, pay more, external response and internal response, served as the dependent variables, while intrinsic motivation, extrinsic motivation - identified, introjected and external regulations - and amotivation were the independent variables.

Examination of beta coefficients indicated that IM ($\beta_o=.25$, $p<.001$) and EMID ($\beta_o=.31$, $F(5.81) = 9.14$, $p<.001$) were significant predictors of loyalty. The overall model explained 36% of variance in loyalty, which was revealed to be statistically significant, $F(5.81) = 9.14$, $p < .001$. AMOT ($\beta_o = -.20$, $p<.001$) was a weak and negative predictor of loyalty.

In relation to switch, IM ($\beta_o = -.41$, $p<.001$) and EMIN ($\beta_o = -.30$, $p<.001$) were negative and weak predictors for switch. The overall model explained 31% of variance in switch, which was revealed to be statistically significant, $F(5.84) = 7.51$, $p < .001$. AMOT ($\beta_o=.22$, $p<.001$) significant predictor for switch; likewise EMER ($\beta_o=.21$, $p<.001$).

The regression analysis revealed that IM ($\beta_o=.23$, $p<.001$) and EMID ($\beta_o=.26$, $p<.001$) were significant predictors for pay more. The overall model explained 30% of variance for the “pay more” measure, which was revealed to be statistically significant, $F(5.83) = 3.43$, $p < .001$. EMIN ($\beta_o=.01$, $p<.001$), EMIER ($\beta_o=.09$, $p<.001$) and AMOT ($\beta_o=.08$, $p<.001$) were weak predictors for switch.

Regarding external response measures IM ($\beta_o=.08$, $p<.001$) and extrinsic motivation measures EMID ($\beta_o=.00$, $p<.001$), EMIN ($\beta_o=.00$, $p<.001$), EMER ($\beta_o = -.01$, $p<.001$) all were negative and weak predictors. The overall model explained 17% of variance in external response; this was revealed to be statistically significant, $F(5.83) = 3.43$, $p < .001$. AMOT ($\beta_o=.31$, $p<.001$); together with EMER ($\beta_o=.36$, $p<.001$) all were good predictors of external response.

AMOT ($\beta_o=.52$, $p<.001$) was significant and a good predictor as an internal response measure. The overall model explained 14% of variance in internal response, which was revealed to be statistically significant at $F(2.85) = 2.75$, $p < .001$. Then followed IM ($\beta_o=.$

39, $p < .001$); while EMID ($\beta_s = -.16$, $p < .001$) and EMIN ($\beta_s = -.20$, $p < .001$) were deemed to be negative and weak predictors of internal response measures (Table 4.14).

Table 4.14: The Regression Analysis Results the Dead Sea

Independent Variables	Regression Equations														
	Loyalty			Switch			Pay more			External response			Internal response		
	B _u	S.E.	β_s	B _u	S.E.	β_s	B _u	S.E.	β_s	B _u	S.E.	β_s	B _u	S.E.	β_s
Intercept	7.54	2.17	-	1.88	1.06	-	1.53	.89	-	3.56	1.77	-	1.36	.783	-
Intrinsic Motivation	.13	.06	.25	.10	.03	-.41	.04	.02	.23	.20	.05	.08	.06	.02	.39
Identified External Motivation	.21	.24	.31	-.03	.11	-.03	.19	.09	.26	.00	.19	.00	-.09	.08	-.16
Introjected External Motivation	.69	.22	.12	-.33	.10	-.30	.01	.09	.01	-.15	.18	-.09	-.13	.08	-.20
External Regulation	.19	.22	.10	.19	.10	.21	.06	.09	.09	.07	.18	.36	.08	.08	.12
Amotivation	-.30	.16	-.20	.16	.08	.22	.11	.06	.08	.34	.13	.31	.26	.06	.52
F-statistic (df)	F(5.81) = 9.14			F(5.84) = 7.51			F(5.83) = 7.43			F(5.83) = 3.43			F(5.85) = 2.75		
p-value	.000			.000			.000			.007			.023		
R²	.36			.31			.30			.17			.14		
Adj. R²	.32			.27			.26			.12			.089		
N	87			90			89			89			91		

Note. B_u = unstandardised beta coefficient; S.E. = standard error of beta, β_s = standardised beta coefficient

* $p < .05$; ** $p < .01$

4.2 Results of the study in Australia

This section reports the results of the current research at Crystal Cave in the Yanchep National Park and The Pinnacles at Nambung National Park in Australia. The findings include the demographics of the respondents, their sources of information about the both sites in Australia, their motivations and needs satisfaction, and the relationship between their motivations and their behavioural intention to re-visit Crystal Cave.

4.2.1 Study results for Crystal Cave

4.2.1.1 Demographics

The majority of the research cohort at Crystal Cave was females (58.5%). Most of the tourists were aged between 18-34 years (53%). The most striking result to emerge from the data was that (14.3%) of the respondents at Crystal Cave were 60 years old and above. In the context of educational level, 40.8% of the respondents were educated to the secondary level and 29.3% had post-graduate qualifications. Of all the respondents, 46.9% were from Australia and 25.9% were British. The rest of the respondents were from different locations in Asia, Europe, Africa and the Americas (Table 4.15).

Table 4.15: Demographics for the Respondents at Crystal Cave

Demographic Items	Value	Percent
Gender (n = 147)	Male	41.5
	Female	58.5
Age (Years) (n = 147)	18-34	36.1%
	35-39	9.5%
	40-49	25.2%
	50-59	15.0%
	60+	14.3%
Education (n = 144)	Primary	4.1%
	Secondary	40.8%
	Undergraduate	23.8%
	Post-graduate	29.3%
Nationality (n = 147)	Australian	46.9%
	British	25.9%
	Scottish	4.1%
	German	3.4%
	Macedonian	2.7%
	Vietnamese	2.7%
	Indian	2.0%
	Irish	2.0%
	American	1.4%
	Filipino	1.4%
	Spanish	1.4%
	Argentinean	1.4%
	Sudanese	1.4%
	Norwegian	0.7%
	Dutch	0.7%
	South Korean	0.7%
	Swiss	0.7%
	Canadian	0.7%

4.3.1.2 Source of information

The respondents were asked if they had sourced information about Crystal cave before undertaking their trip. The results showed that most of the respondents did not source any information about Crystal Cave before visiting it. One hundred and six respondents answered in the negative for the usage of source of information about Crystal Cave whereas 41 respondents had been helped to decide.

When asked to identify the main information source of information they had used before undertaking their trip to Crystal Cave, the sources listed included brochures, local tourist offices, state travel guides, magazines, newspapers, travel agents, friends or relatives, and personal experience. The results indicate that the Internet (51.2%) was the most frequently used source of information by the respondents to learn about the Crystal Cave before their visit to the site. Friends and relatives and personal experience respectively were the next source of information for (17.1%) of respondents. Interestingly, only one respondent had used the Newspaper as a source the information about Crystal Cave (Figure 4.3).

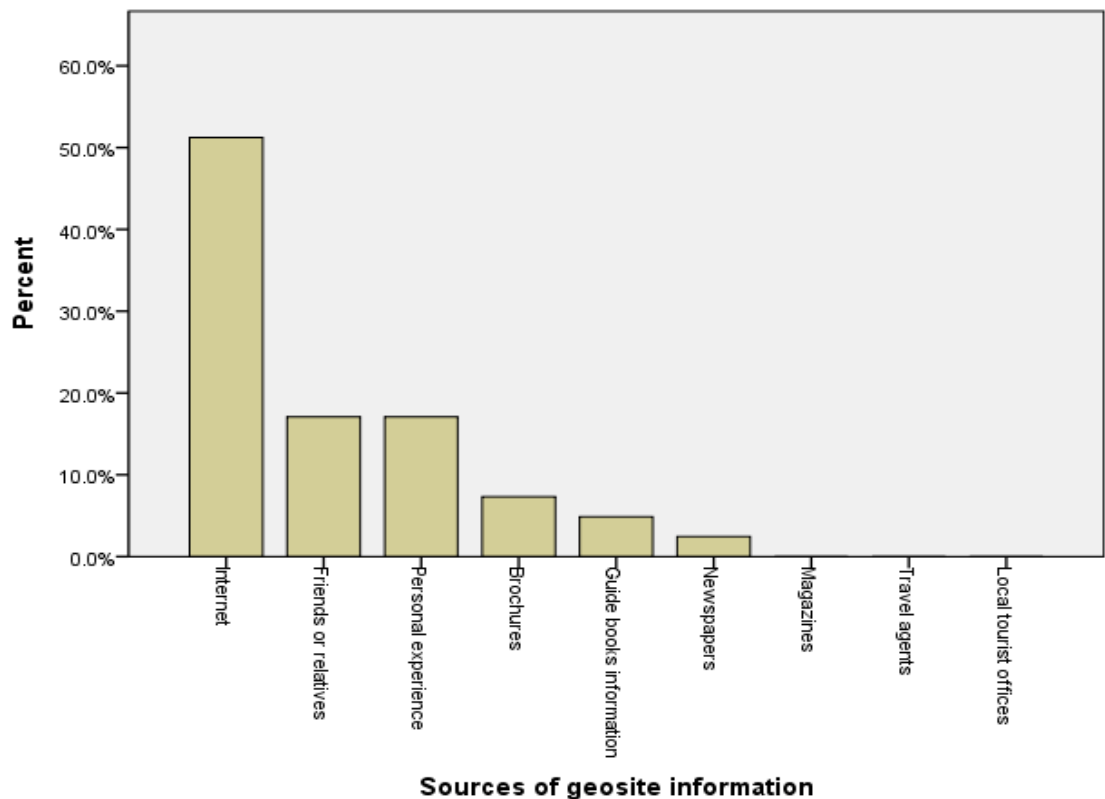


Figure 4.3: Sources of information for the respondents in Crystal Cave

4.2.1.3 Tourists' motivation

The results obtained from the analysis of intrinsic motivations of the respondents at Crystal Cave are shown in Table 4.18. The mean score ranged from 2.31 to 3.95, and the standard deviations ranged between 1.02 and 1.30. The Cronbach Alpha for the items measuring intrinsic motivation was 0.79. Overall, the main factors of respondents' intrinsic motivation for engaging in this geotourism experience were enjoyment ($M = 3.78$, $SD = 2.48$), knowledge ($M = 3.74$, $SD = 1.09$), relaxation ($M = 3.59$, $SD = 1.19$) and a sense of wonder and ($M = 3.43$, $SD = 1.22$). In terms of items measuring intrinsic motivation, the item, 'It is exciting' (enjoyment) had the highest mean score ($M = 3.95$, $SD = 1.02$); whereas, the item, 'to meet people with similar interests and hobbies' (friendship) had the lowest mean score ($M = 2.31$, $SD = 1.25$).

Table 4.16: The Results of the Intrinsic Motivation Measurement in Crystal Cave

Measures	Mean	SD	Number of responses (n = 144)
Knowledge	3.74	1.09	144
To learn new things	3.78	1.12	145
To increase my knowledge	3.70	1.06	144
Relaxation	3.03	1.28	144
To relax and rest	3.25	1.28	144
To refresh my mental and physical state	2.81	1.28	143
Escape	N/A	N/A	N/A
To escape from the daily life routine	3.59	1.19	144
Enjoyment	3.78	2.48	143
It is exciting	3.95	1.02	144
To have fun	3.62	1.10	143
Friendship	2.86	1.27	142
To meet people with similar interests and hobbies	2.31	1.25	144
To travel with friends and my family	3.41	1.30	142
Sense of Wonder	3.43	1.22	143
Because it is an exotic place	3.04	1.25	144
To explore new places	3.82	1.20	143

The mean scores for extrinsic motivation ranged from 1.99 to 3.04, and the standard deviations ranged between 1.17 and 1.27 (Table 4.17). The Cronbach Alpha for the items measuring extrinsic motivation ranged from 0.71 to 0.74. The main extrinsic motivations for tourists undertaking the geotourism experience at Crystal Cave were the identified as extrinsic motivation (M= 2.85, SD= 1.19) and the introjected item for intrinsic motivation was (M= 2.60, SD= 1.23). For the individual items measuring extrinsic motivation, the item, “because it has many social, cultural and recreational advantages for me” had the highest mean score (M= 3.04, SD= 1.17) while the item, “because my family and friends tell me to do this activity” (M= 1.99, SD= 1.20) was lowest.

Table 4.17: The Results for the Extrinsic Motivation Measurement at Crystal Cave

Measures	Mean	SD	Number of responses (n = 144)
Identified	2.85	1.19	143
Because it has many social, cultural and recreational advantages for me	3.04	1.17	143
Because I believe it is personally important to me to travel to the site	2.67	1.22	143
Intorjected	2.60	1.23	143
In my life I need this type of tourism activity to be happy	2.60	1.23	143
I must be occupied with activities	2.60	1.23	143
External regulation	2.07	1.23	143
To show others that I am a distinct person	2.15	1.27	143
Because my family and friends tell me to do this activity	1.99	1.20	143

The table below illustrates the results obtained from the analysis of the amotivation dimension for the respondents at Crystal Cave. The three items of the amotivation scale showed low mean scores. The standard deviations for the items measuring the amotivation state ranged between 1.09 and 1.25.

Table 4.18: The Results of the Amotivation Measurement at Crystal Cave

Measures	Mean	SD	Number of responses (n = 144)
Not by choice; I don't care about this type of tourism activity	1.79	1.14	143
I don't really know; I don't think that this type of tourism suits me	1.94	1.25	142
Honestly, I don't know; I think that I wasted my time in this type of tourism activity	1.67	1.09	143

4.2.1.4 Tourists' needs satisfaction

Regarding the psychological needs satisfaction for the research cohort engaged in a geotourism experience at Crystal Cave, the mean scores ranged from 1.69 to 4.29, while the standard deviations ranged between 0.960 and 1.36. The Cronbach Alpha for the items measuring BPNS was 0.74.

Of the three basic needs satisfaction items on the questionnaire, autonomy had the highest mean score ($M = 3.42$, $SD = 1.18$), followed by competence ($M = 3.07$, $SD = 1.06$). Few respondents agreed with the item, 'pressured at this place' ($M = 2.32$, $SD = 1.14$). The item, 'that my choice of visiting this geosite is based on my true interests and values' had the highest mean score ($M = 4.29$, $SD = .960$); whereas, the lowest mean score ($M = 1.69$, $SD = 1.08$) was recorded by the item, 'that I have been able to learn interesting new skills which are related to competence' (Table 4.19).

Table 4.19: The Results of the Needs Satisfaction Measurement in Crystal Cave

Measures	Mean	SD	Number of responses (n = 144)
Autonomy	3.42	1.18	142
That my choice of visiting this geosite is based on my true interests and values	4.29	.960	144
Pressured at this place	2.97	1.23	142
That there is not much opportunity for me to decide for myself where I want to visit	3.00	1.36	142
Competence	3.07	1.06	140
That people I know tell me I am good at choosing tourist sites	3.98	1.02	141
That most times I feel a sense of accomplishment from what I do	3.55	1.09	144
That I have been able to learn interesting new skills	1.69	1.08	142
Relatedness	2.52	1.20	142
That people at this place were friendly towards me	3.22	1.13	143
That I like the people I am travelling with	3.06	1.31	142
A strong sense of intimacy with the people I spent time with	1.92	1.22	142
That the people I travel with do not seem to like me much	1.89	1.16	142

4.2.1.5 The relationship between tourist motivation and behavioural intention to repeat the visit to Crystal Cave

Pearson's bivariate correlations were conducted to check the intercorrelations between the study variables, motivations and behavioural intention measures. Correlations amongst the motivations variables were most significant at $p < .01$ ranging from strong, $r = 0.56^{**}$, to weak and non-significant, $r = 0.12$. The strongest correlation was between AMOT and EMER $r = 0.56^{**}$, whilst the weakest correlation was between IM and AMOT, $r = 0.12$. The results showed that the patterns of correlations amongst the five behavioral intentions measures were most significant at $p < .01$, and they ranged from strong $r = 0.47^{**}$ to negative and non-significant and $r = -0.08$.

The results revealed that the correlations amongst the five behavioral intentions measures were most significant at $p < .01$. They ranged from strong $r = 0.47^{**}$ to negative and non-significant $r = -0.08$. The strongest correlation was between external response and internal responses $r = 0.47^{**}$, while, the most negative and non-significant correlation was between loyalty and external response $r = -0.08$.

Of the intercorrelations between the motivations and the behavioural intention measures, the correlations ranged from strong and significant $r = 0.54^{**}$ to negative and non-significant $r = -0.05$. The results showed that most consistent and strongest correlations were between loyalty and IM, $r = 0.54^{**}$. While the negative and non-significant correlations were between loyalty and AMOT, $r = -0.05$, switch and EMID, $r = -0.06$, and external response and EMID, $r = -0.02$.

Table 4.20: The Correlations between the Study Variables/ Crystal Cave

Variables	Loyalty	Switch	Pay more	External Response	Internal response	IM	EMID	EMIN	EMER	AMOT
Loyalty	-	.08	.29**	-.084	.30**	.54**	.33**	.28**	.13	-.05
Switch		-	.37**	.335**	.36**	.07	-.06	.05	.24**	.35**
Pay more			-	.47**	.30**	.26**	.26**	.26**	.32**	.37**
External Response				-	.47**	-.00	-.02	.01	.25	.40**
Internal response					-	.12	.06	.13	.04	.09
IM						-	.48**	.52**	.46**	.12
EMID							-	.48**	.36**	.35**
EMIN								-	.44**	.25**
EMER									-	.56**
AMOT										-
Mean	18.02	5.73	5.30	7.79	2.95	33.36	5.72	5.21	4.14	5.41
S.D	3.93	1.96	1.68	3.40	1.47	6.92	2.06	2.06	1.99	2.76

Note: IM = intrinsic motivation, EMID = identified extrinsic motivation, EMIN = introjected extrinsic motivation, EMER = external regulation of extrinsic motivation, AMOT = amotivation.

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

A series of linear regression analyses was conducted to test the relationships between the study variables whereby the dimensions of behavioural intention served as the dependent variables and motivations were the independent variables. The results of regression analysis indicate that IM ($\beta_o=.56$, $p<.001$) was a significant predictor of loyalty. The overall model explained 35% of variance in loyalty, which was revealed to be statistically significant, $F(5.12) = 13.69$, $p < .001$. AMOT ($\beta_o = -.09$, $p<.001$) and EMER ($\beta_o = -.14$, $p<.001$) were weak and negative predictors for loyalty.

Concerning items related to switch, EMID ($\beta_o= -.30$, $p<.001$) and EMIN ($\beta_o= -.03$, $p<.001$) were negative and weak predictors for that dimension. The overall model explained 19% of variance in switch, which was revealed to be statistically significant at $F(5.12) = 6.23$, $p < .001$. AMOT ($\beta_o=.42$, $p<.001$) was found to be a significant predictor for switch.

In the context of 'pay more', IM ($\beta_o=.14$, $p<.001$) was a significant predictor. The overall model explained 19% of variance in pay more which was revealed to be statistically significant, $F(5.12) = 6.13$, $p < .001$, whereas, AMOT ($\beta_o= .02$, $p<.001$) was a weak predictor for pay more.

IM ($\beta_o=.00$, $p<.001$), EMID ($\beta_o= -.18$, $p<.001$) and EMIN ($\beta_o= -.07$, $p<.001$) were negative and weak predictors for the external response measure. The overall model explained 20% of variance in external response; this was revealed to be statistically significant, $F(5.12) = 6.33$, $p < .001$. AMOT ($\beta_o=.40$, $p<.001$) was found to be a good predictor of external response.

AMOT ($\beta_o= .14$, $p<.001$) was good predictor for the internal response measure. The overall model explained 14% of variance in internal response, $F(5.13) = .978$, $p < .001$, followed by IM ($\beta_o= .13$, $p<.001$). EMID ($\beta_o= -.05$, $p<.001$) and EMIER ($\beta_o= -.13$, $p<.001$) were negative and weak predictors for the internal response measure (Table 4.21).

Table 4.21: The Regression Analysis Results / Crystal Cave

	Regression Equations														
Independent Variables	Loyalty			Switch			Pay more			External response			Internal response		
	B _u	S.E.	β _σ	B _u	S.E.	β _σ	B _u	S.E.	β _σ	B _u	S.E.	β _σ	B _u	S.E.	β _σ
Intercept	7.40	1.51	-	4.17	.825	-	2.52	.706	-	6.45	1.42	-	1.79	.67	-
Intrinsic Motivation	.32	.05	.56	.04	.03	.14	.03	.02	.14	.00	.05	.00	.03	.02	.13
Identified External Motivation	.28	.16	.14	-.28	.09	-.30	.03	.08	.04	-.30	.16	-.18	-.03	.07	-.05
Introjected External Motivation	.02	.17	.015	-.02	.09	-.03	.05	.08	.07	-.12	.16	-.07	.07	.07	.01
External Regulation	-.28	.19	-.14	.07	.10	.07	.03	.09	.04	.21	.18	.12	-.09	.08	-.13
Amotivation	-.13	.13	-.09	.30	.07	.42	.18	.06	.02	.50	.12	.40	.07	.05	.14
F-statistic (df)	F(5.12) = 13.69			F(5.12) = 6.25			F(5.12) = 6.13			F(5.12) = 6.33			F(5.13) = .978		
p-value	.000			.000			.000			.000			.009		
R²	.35			.19			.19			.20			.001		
Adj. R²	.32			.16			.16			.17			.036		
N	132			134			135			134			136		

Note: B_u = unstandardised beta coefficient; S.E. = standard error of beta, β_s = standardised beta coefficient

*p<.05; **p<.01

4.2.2 Results of the study of The Pinnacles

This section reports the main findings of the study concerning The Pinnacles, Nambung National Park, Western Australia. The results recorded include the tourists' motivations, that is, intrinsic motivation, extrinsic motivation and amotivation, the tourists' needs satisfaction, and the relationship between the tourists' motivations and the behavioural intention to revisit The Pinnacles.

4.2.2.1 Demographic

Regarding the demographic characteristics of the respondents at The Pinnacles in Nambung National Park, of the 141 domestic and international tourists who completed the questionnaire, 84 respondents were female (59.6%), and the age category (18-34) was the major age group at 36.1%. The age category, 35-39 (9.5%), represented the smallest age group at this location. For educational levels, the largest proportion of the respondents had a secondary level education (45.4%), followed by those who had a post-graduate degree (29.8%). It was noteworthy that no respondents had only a primary school education. The distribution of the respondents' nationality indicated that the majority of them were domestic tourists (36.9%); whereas most of the international tourists came from Germany (19.1%), and England (17%). The other respondents were from a variety of locations from Europe, Asia, North America and New Zealand (Table 4.22)

Table 4.22: Demographics for the Respondents at The Pinnacles

Demographic Items	Value	Percent
Gender (n = 141)	Male	40.4
	Female	59.6
Age (Years) (n = 141)		
	18-34	36.1%
	35-39	9.5%
	40-49	25.2%
	50-59	15.0%
	60+	14.3%
Education (n = 141)		
	Primary	0.0%
	Secondary	45.4%
	Undergraduate	24.8%
	Post-graduate	29.8%
Nationality (n = 141)	Australian	36.9%
	German	19.1%
	English	17%
	Canadian	5.0%
	Japanese	4.3%
	New Zealander	3.5%
	South Korean	3.5 %
	Swiss	2.1%
	Italian	1.4%
	American	1.4%
	Czech	1.4%
	French	1.4%
	Dutch	1.4%
	Portuguese	1.4%
	Irish	0.7%

4.2.2.2 Source of information

In response to the question, ‘Did you use any source of information about Crystal Caves before undertaking your trip?’ most of those surveyed agreed to having sourced information about the Pinnacles before the visit (53.9%); whereas (46.1%) had not used any source of information.

The data in Figure 4.4 shows that the Internet (37.2%) was the most common source for gaining information about the Pinnacles by the respondents before the visit; whereas (34.6%) of the them used guide book informations as their main source of information. No respondent had used a travel agent or used a newspaper as sources of information before undertaking their trip.

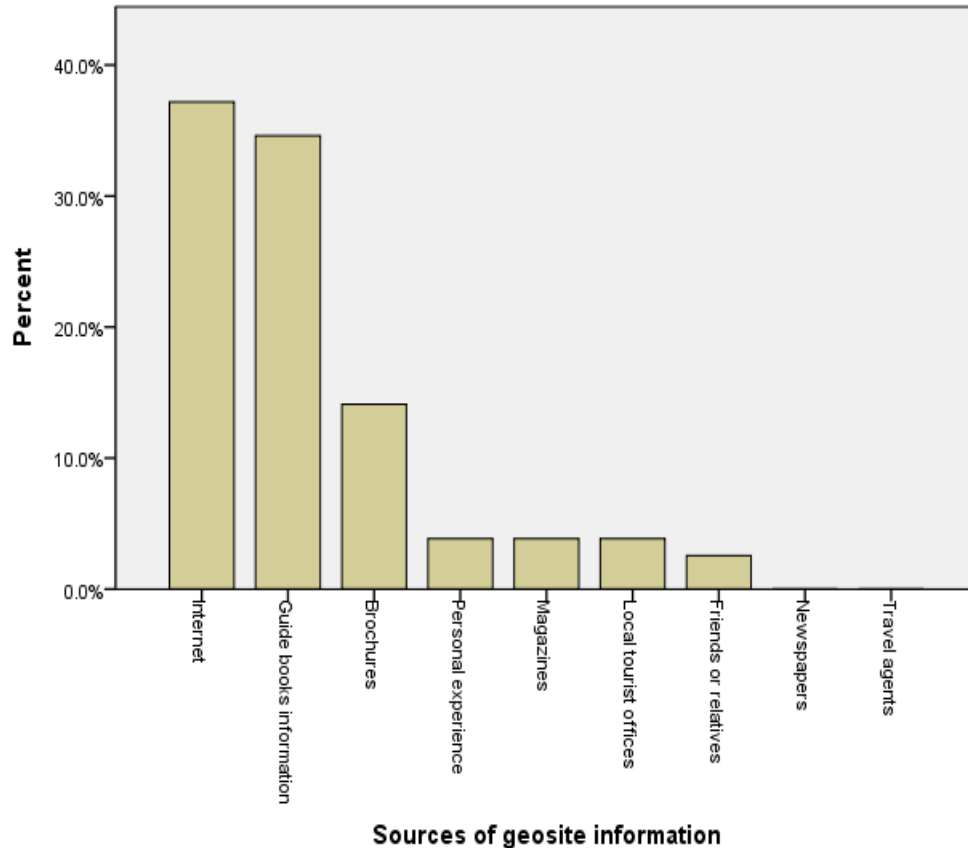


Figure 4.4: Sources of information for the respondents in the Pinnacles

4.2.2.3 Tourists' motivation

This section reports the results of the different types of motivation, intrinsic motivation, extrinsic motivation and amotivation, of tourists engaging in a geotourism experience in The Pinnacles. In the context of the intrinsic motivation, its mean scores ranged from 2.80 to 4.14, whereas, the standard deviations ranged between 1.06 and 1.53. The Cronbach Alpha for the intrinsic motivation items was 0.71. The results revealed that the main intrinsic motivations were knowledge ($M = 3.67$, $SD = 1.15$), sense of wonder ($M = 3.66$, $SD = 1.12$), enjoyment ($M = 3.54$, $SD = 1.17$), and escape ($M = 3.31$, $SD = 1.21$). Regarding the individual items measuring the intrinsic motivation for geotourism participants, the item, 'to explore new places', which is related to sense of wonder, was the most frequent, its intrinsic motivation mean score being ($M = 4.14$, $SD = 1.06$). Table 4.23 shows the item, 'To meet people with similar interests and hobbies', which is related to friendship, was the least frequent of the intrinsic motivation items ($M = 2.42$, $SD = 1.19$).

Table 4.23: The Results of the Intrinsic Motivation Measurement in the Pinnacles

Measures	Mean	SD	Number of responses (n = 144)
Knowledge	3.67	1.15	141
To learn new things	3.61	1.17	141
To increase my knowledge	3.74	1.14	141
Relaxation	2.90	1.18	141
To relax and rest	2.80	1.23	141
To refresh my mental and physical state	3.01	1.13	141
Escape	N/A	N/A	N/A
To escape from the daily life routine	3.31	1.21	141
Enjoyment	3.54	1.17	141
It is exciting	3.74	1.14	141
To have fun	3.34	1.20	141
Friendship	2.75	1.36	141
To meet people with similar interests and hobbies	2.42	1.19	141
To travel with friends and my family	3.09	1.53	141
Sense of Wonder	3.66	1.12	141
Because it is an exotic place	3.19	1.18	141
To explore new places	4.14	1.06	141

In the extrinsic motivation context, the mean scores for the respondents in at this geosite ranged from 1.17 to 3.05; while the standard deviations for the items measuring extrinsic motivation ranged between 0.967 to 1.23. The Cronbach Alpha for the items measuring extrinsic motivation ranged from 0.70 to 0.72. The main extrinsic motivations for the respondents at the Pinnacles geosite were the identified extrinsic motivation ($M = 3.97$, $SD = 1.04$), and introjected extrinsic motivation ($M = 2.79$, $SD = 1.14$).

Table 4.24: The Results of the Extrinsic Motivation Measurement in the Pinnacles

Measures	Mean	SD	Number of responses (n = 141)
Identified	3.97	1.04	141
Because it has many social, cultural and recreational advantages for me	3.05	.976	141
Because I believe it is personally important to me to travel to the site	2.90	1.12	141
Intorjected	2.79	1.14	140
In my life I need this type of tourism activity to be happy	3.00	1.23	140
I must be occupied with activities	2.59	1.05	140
External regulation	2.38	1.09	140
To show others that I am a distinct person	2.17	1.14	140
Because my family and friends tell me to do this activity	2.59	1.05	140

The total items of the amotivation factor showed low mean scores ranging from 1.87 to 2.19. The standard deviations ranged between 1.26 and 1.33. The internal reliability for amotivation items was 0.70 (Table 4.25).

Table 4.25: The Results of the Amotivation Measurement in the Pinnacles

Measures	Mean	SD	Number of responses (n = 141)
Not by choice; I don't care about this type of tourism activity	2.06	1.30	141
I don't really know; I don't think that this type of tourism suits me	2.19	1.33	141
Honestly, I don't know; I think that I wasted my time in this type of tourism activity	1.87	1.26	141

4.2.2.4 Tourist needs satisfaction

The three factors of the basic psychological needs satisfaction, autonomy, competence and relatedness, of the respondents had high mean scores ranging from 4.04 to 1.92. The standard deviations for the BPNS items ranged from 1.04 to 1.32. The Cronbach Alpha for the items measuring the BPNS was 0.71. Of the three basic needs satisfaction, competence had the highest mean score ($M = 3.22$, $SD = 1.15$), followed closely by autonomy ($M = 3.15$, $SD = 1.17$). The item, 'that people I know tell me I am good at choosing tourist sites' which is related to the competence factor, had the highest mean score ($M = 4.04$, $SD = 1.05$), but few respondents agreed with the item, 'pressured at this place' ($M = 2.85$, $SD = 1.28$) (Table 4.26).

Table 4.26: The Results of the Needs Satisfaction Measurement in the Pinnacles

Measures	Mean	SD	Number of responses (n = 141)
Autonomy	3.15	1.17	140
That my choice of visiting this geosite is based on my true interests and values	3.73	1.04	141
Pressured at this place (R)	2.85	1.28	140
That there is not much opportunity for me to decide for myself where I want to visit (R)	2.88	1.21	140
Competence	3.22	1.15	140
That people I know tell me I am good at choosing tourist sites	4.04	1.05	140
That most times I feel a sense of accomplishment from what I do	3.58	1.08	141
That I have been able to learn interesting new skills	2.04	1.32	141
Relatedness	2.63	1.18	140
That people at this place were friendly towards me	3.27	1.06	140
That I like the people I am travelling with	3.37	1.17	140
A strong sense of intimacy with the people I spent time with	1.92	1.25	140
That the people I travel with do not seem to like me much (R)	1.97	1.27	140

4.2.2.5 The relationship between tourist motivation and behavioural intention to repeat the visit

Pearson's bivariate correlations between the different motivational types (intrinsic motivation, extrinsic motivation, identified extrinsic motivation, introjected extrinsic motivation, external regulations of extrinsic motivation and amotivation), and behavioural intention measures (loyalty, switch, pay more, external response and internal response) were conducted to check the intercorrelations between these constructs.

The results revealed that the patterns of correlations amongst the motivation variables were most significant at $p < .01$, ranging from strong $r = .63^{**}$ to non-significant $r = 0.04$. The results also showed that the strongest correlation was between EMID and EMIN, $r = .63^{**}$, and the weakest non-significant correlation being between IM and EMER, $r = 0.04$ and EMID and AMOT, $r = 0.05$.

The patterns of correlations amongst the five behavioral intentions measures were mostly non-significant ranging from strong $r = .42^{**}$ to negative and non-significant $r = -0.01$. The results revealed that the strongest correlation was between internal response and external responses $r = 0.42^{**}$, $p < .01$, whereas, the most negative and non-significant correlations

were between switch and internal response, $r = -0.01$, followed by loyalty and external response $r = -0.02$.

For the intercorrelations between the different motivations and the behavioural intention measures, the results showed that the correlations ranged from strong $r = 0.42^{**}$ to non-significant $r = 0.01$. The most consistent and strong correlations were between IM and loyalty, $r = 0.42^{**}$, followed closely by EMID and loyalty, $r = 0.33^{**}$. The negative and non-significant correlations were between AMOT and loyalty $r = -0.16$, EMER and loyalty $r = -0.08$, and IM and internal response $r = -0.06$ (Table 4.27).

Table 4.27: Correlations between the Study Variables/ The Pinnacles

Variables	Loyalty	Switch	Pay more	External Response	Internal response	IM	EMID	EMIN	EMER	AMOT
Loyalty	-	.02	.090	-.02	.03	.42**	.33**	.30**	-.08	-.16
Switch		-	.09	.12	-.01	.12	.20*	.11	.14	-.04
Pay more			-	.27**	.12	.05	.13	.14	.25**	.37**
External Response				-	.42**	-.12	-.03	.06	.28**	.33**
Internal response					-	-.06	-.18*	-.18*	.01	.063
IM						-	.44**	.47**	.04	-.22**
EMID							-	.63**	.26**	.05
EMIN								-	.31**	.10
EMER									-	.52**
AMOT										-
Mean	16.92	6.51	5.30	7.85	2.92	36.45	5.96	5.59	4.21	6.13
S.D	3.76	1.68	1.70	2.75	1.30	6.37	1.69	1.83	2.03	3.07

Note: IM = intrinsic motivation, EMID = identified extrinsic motivation, EMIN = introjected extrinsic motivation, EMER = external regulation of extrinsic motivation, AMOT = amotivation.

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

A series of linear regression analyses were conducted to test the relationships between tourist motivations and their behavioural intentions to revisit The Pinnacles. The dimensions of behavioural intention, that is, loyalty, switch, pay more, external response and internal response served as the dependent variables, whilst intrinsic motivation, extrinsic motivation, identified, introjected and external regulations, and amotivation were the independent variables.

In relation to the loyalty measure, the results of the regression analysis indicated that IM ($\beta_o=.30$, $p<.001$) and EMID ($\beta_o=.18$, $p<.001$) were significant predictors of loyalty. The overall model explained 24% of variance in loyalty, which was revealed to be statistically significant, $F(5,13) = 8.27$, $p < .001$. Whereas AMOT ($\beta_o = .04$, $p<.001$), EMER ($\beta_o = -.15$, $p<.001$) were weak and negative predictors for loyalty.

The results of regression analysis indicate that IM ($\beta_o = -.31$, $p<.001$) was weak and a negative predictor for switch. The overall model explained only .06% of variance in switch, $F(5,13) = 1.90$, $p < .001$, while AMOT ($\beta_o=.14$, $p<.001$) and EMER ($\beta_o=.19$, $p<.001$) were good predictors for switch.

The results of regression analysis also revealed that AMOT ($\beta_o=.39$, $p<.001$) and IM ($\beta_o=.12$, $p<.001$) were significant predictors for pay more. The overall model explained 17% of variance in pay more, which was revealed to be statistically significant, $F(5,13) = 5.31$, $p < .001$. Whereas, extrinsic motivations (EMID, $\beta_o = .05$, $p<.001$, EMIN, $\beta_o=.04$, $p<.001$, EMER, $\beta_o=.04$, $p<.001$) were weak and negative predictors for pay more.

AMOT ($\beta_o = -.25$, $p<.001$) and EMER ($\beta_o=.17$, $p<.001$) were good and significant predictors as external response measures. The overall model explained 15% of variance in external response, which was revealed to be statistically significant, $F(5,13) = 4.53$, $p < .001$. However IM ($\beta_o = -.08$, $p<.001$) and EMID ($\beta_o = -.11$, $p<.001$) were negative and weak predictors for external response.

Of the different motivational types, only AMOT ($\beta_o=.10$, $p<.001$) was a good predictor for the internal response measure. The overall model explained only .05% of variance in internal response (Table 4.28).

Table 4.28: The Regression Analysis Results/ The Pinnacles

	Regression Equations														
Independent Variables	Loyalty			Switch			Pay more			External response			Internal response		
	B _u	S.E.	β _σ	B _u	S.E.	β _σ	B _u	S.E.	β _σ	B _u	S.E.	β _σ	B _u	S.E.	β _σ
Intercept	8.68	1.92	-	5.24	.953	-	2.43	.908	-	7.19	1.48	-	3.14	.74	-
Intrinsic Motivation	.17	.05	.30	-.30	.02	-.31	.03	.02	.12	-.04	.04	-.08	.02	.02	.01
Identified External Motivation	.40	.23	.18	.19	.11	.19	.04	.10	.05	-.18	.17	-.11	-.10	.08	-.15
Introjected External Motivation	.23	.22	.11	-.06	.10	-.07	.00	.10	.03	.13	.16	0.9	-.11	.08	-.15
External Regulation	-.28	.17	-.15	.15	.08	.19	.02	.08	.04	.23	.13	.17	.01	.06	.02
Amotivation	-.05	.11	-.04	.07	.05	.14	.22	.05	.39	.20	.08	.25	.04	.04	.10
F-statistic (df)	F(5.13) = 8.27			F(5.13) = 1.90			F(5.13) = 5.31			F(5.13) = 4.53			F(5.13) = 1.56		
p-value	.000			.098			.008			.001			.147		
R²	.24			.06			.17			.15			.05		
Adj. R²	.21			.03			.14			.12			.02		
N	140			140			140			140			140		

Note: B_u = unstandardised beta coefficient; S.E. = standard error of beta, β_s = standardised beta coefficient

*p<.05; **p<.01

4.3 The results of the study by countries

This section reports the results of this research by country, including those of Jordan and Australia.

4.3.1 The results of the study in Jordan

A total of 300 questionnaires was administered in Jordan with a total of 297 being coded for data analysis. Three questionnaires were invalid because they were not completed. In terms of gender, (56.2%) of the respondents were male, the remainder being female. A large majority of the respondents (66.9%) in Jordan were aged 18-34 years old, followed by the age group 35-39 (20.9%). The 60+ age group was poorly represented (0.3%). In the matter of formal education, most of the respondents had an undergraduate level education (41.3%), followed by a postgraduate level education of 35.2%. Additionally, the results in Jordan showed that most of the respondents were domestic and intraregional tourists, the majority of them being domestic tourists from Jordan (66.4%). The next nearest tourists were from Syria (8.8%) and Palestine (3.7%). The largest number of international tourists came from the Netherlands (7.5%). Others were from a variety of different locations in the Middle East, Europe, North America and Australia (Table 4.29).

Table 4.29: Demographics for the Respondents in Jordan

Demographic Items	Value	Percent
Gender (N = 297)	Male	56.2
	Female	43.8
Age (Years) (N = 296)	18-34	66.9%
	35-39	20.9%
	40-49	9.5%
	50-59	2.4%
	60+	0.3%
Education (N = 193)	Primary	0.3%
	Secondary	23.2%
	Undergraduate	41.3%
	Post-graduate	35.2%
Nationality (N = 295)	Jordanian	66.4%
	Syrian	8.8%
	Dutch	7.5%
	Palestinian	3.7%
	Algerian	2.4%
	Iraqi	1.7%
	Saudi	1.4%
	American	1.4%
	German	1.0%
	English	1.0%
	Lebanese	0.7%
	Bahraini	0.7%
	Egyptian	0.3%
	Qatari	0.3%
	Scottish	0.3%
	French	0.3%
	Australian	0.3%

Question 1 in Part Two of the questionnaire sought information on the source of tourists' information. It found that most Wadi Rum and Dead Sea tourists (71.1%) sourced information prior to their visit, whereas, (28.9%) indicated that they did not use any source to gain information.

Of the initial cohort of 297 tourists, 51.7% used the Internet as the main source of information about Wadi Rum or the Dead Sea in Jordan before undertaking their trip, followed by 13.4% who read brochures about the sites. Only (1%) of the respondents had sourced information about the sites from local tourist offices or travel agents (Figure 4.5).

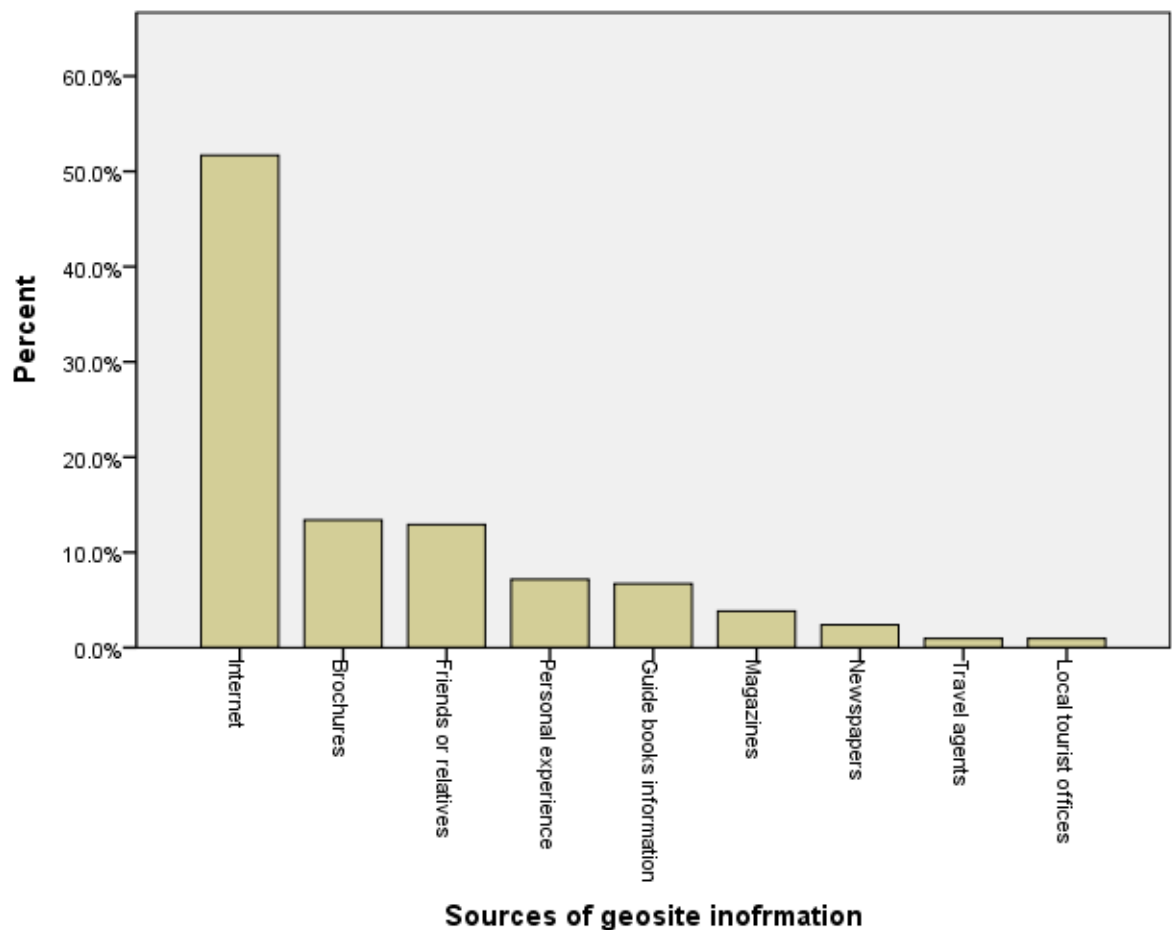


Figure 4.5: Sources of information for the respondents in Jordan

The mean scores of intrinsic motivation for the respondents in Jordan ranged from 3.56 to 3.95; and the standard deviations for the items measuring intrinsic motivation were in the range 1.07 to 1.27. The highest mean scores for the intrinsic motivation were:

- Escape from the daily life routine (M = 3.95, SD = 1.10).
- Enjoyment (M = 3.90, SD = 1.10).
- Relaxation (M = 3.88, SD = 1.12).
- Sense of wonder (M = 3.86, SD = 1.11).

Table 4.30: The Results of Intrinsic Motivation for the Respondents in Jordan

Measures	Mean	SD	Number of responses (n = 297)
Factor 1: Knowledge	3.74	1.21	297
To learn new things	3.70	1.27	297
To increase my knowledge	3.78	1.16	292
Factor 2: Relaxation	3.88	1.12	293
To relax and rest	3.94	1.11	296
To refresh my mental and physical state	3.82	1.13	294
Factor 3: Escape	NA	NA	NA
To escape from the daily life routine	3.95	1.10	295
Factor 4: Enjoyment	3.90	1.10	292
It is exciting	3.95	1.07	293
To have fun	3.85	1.13	292
Factor 5: Friendship	3.68	1.14	289
To meet people with similar interests and hobbies	3.56	1.14	291
To travel with friends and my family	3.80	1.14	291
Factor 6: Sense of Wonder	3.86	1.11	292
Because it is an exotic place	3.83	1.09	292
To explore new places	3.90	1.14	292

The data in Table 4.34 shows the mean score for the extrinsic motivation of the respondents in Jordan to range from 2.87 to 3.74, while the standard deviations ranged between 0.986 and 1.28. The highest mean scores for extrinsic motivation were identified as: extrinsic

motivation ($M = 3.68$, $SD = 1.17$); and external regulations of extrinsic motivation ($M = 3.14$, $SD = 1.27$).

Table 4.31: The Results of Extrinsic Motivation for the Respondents in Jordan

Measures	Mean	SD	Number of responses (n = 297)
Identified	3.68	1.17	293
Because it has many social, cultural and recreational advantages for me	3.74	1.15	297
Because I believe it is personally important to me to travel to the site	3.62	1.20	293
Introjected	2.91	1.03	291
In my life I need this type of tourism activity to be happy	2.95	1.08	292
I must be occupied with activities	2.87	.986	295
External regulation	3.14	1.27	291
To show others that I am a distinct person	3.11	1.28	293
Because my family and friends tell me to do this activity	3.17	1.27	293

The mean scores for amotivation measures ranged from 2.12 to 2.69 (Table 4.32); the standard deviations for the items measuring motivations were in the range 0.901 to 1.33. Overall, the results showed respondents of this study in Jordan were less amotivated. Furthermore, the mean scores for the intrinsic motivations scales were higher than those of the extrinsic motivation and the amotivation items.

Table 4.32: The Results of Amotivation for the Respondents in Jordan

Measures	Mean	SD	Number of responses (n = 297)
Not by choice; I don't care about this type of tourism activity	2.12	.901	297
I don't really know; I don't think that this type of tourism suits me	2.69	1.17	296
Honestly, I don't know; I think that I wasted my time in this type of tourism activity	2.62	1.33	290

Table 4.33 records the results of the three basic needs for the physiological satisfaction of the geotourism participants at the Wadi Rum and the Dead Sea geosites in Jordan. The mean score of the three relevant factors, autonomy, competence and relatedness, ranged from 2.32 to 4.07. The standard deviations for the BPNS items ranged between 1.05 and 1.37. Taken as a whole, the respondents engaging in a geotourism experience in Wadi Rum and the Dead Sea in Jordan had expressed a high level of needs satisfaction. Autonomy had the highest level of satisfaction ($M = 3.32$, $SD = 1.09$), followed closely by competence ($M = 3.31$, $SD = 1.16$) and external regulations ($M = 3.30$, $SD = 1.17$).

Table 4.33: The Results of the Needs Satisfaction for the Respondents in Jordan

Measures	Mean	SD	Number of responses (n = 297)
Autonomy	3.32	1.09	283
That my choice of visiting this geosite is based on my true interests and values	4.07	1.08	288
Pressured at this place	2.32	1.13	287
That there is not much opportunity for me to decide for myself where I want to visit	3.59	1.08	288
Competence	3.31	1.16	282
That people I know tell me I am good at choosing tourist sites	3.62	1.05	287
That most times I feel a sense of accomplishment from what I do	3.10	1.25	287
That I have been able to learn interesting new skills	3.22	1.19	285
Relatedness	3.30	1.17	281
That people at this place were friendly towards me	3.46	.972	288
That I like the people I am travelling with	3.52	1.10	284
A strong sense of intimacy with the people I spent time with	3.05	1.37	285
That the people I travel with do not seem to like me much	3.18	1.25	286

4.3.2 Results of the study in Australia

The questionnaire was completed and returned by 288 members of the research cohort in Australia. Decidedly more respondents were female (59%) than male (41%). The majority of respondents were aged 18-34 years old, the next most populated age group being the 50-59 years olds (17%). Noteworthy was that the 60+ years old group represented (39%) of the sample. The majority of the respondents had a secondary level education, only 2.1% of them having a primary level education. The distribution of the nationalities of these respondents showed that the large proportion were domestic tourists from Australia (42%). Most of the international tourists were from England (21.5%) and Germany (11.1%). Other tourists came from a variety of countries, including New Zealand, Asia, Europe, North America and Africa (Table 4.34).

Table 4.34: Demographics for the Respondents in Australia

Demographic Items	Value	Percent
Gender (n = 288)	Male	41%
	Female	59%
Age (Years) (n =288)	18-34	45.5%
	35-39	7.6%
	40-49	16.3%
	50-59	17.0%
	60+	13.5%
Education (n = 285)	Primary	2.1%
	Secondary	43.5%
	Undergraduate	24.6%
	Post-graduate	29.8%
Nationality (n = 288)	Australian	42.0%
	English	21.5%
	German	11.1%
	Vietnamese	3.5%
	Canadian	2.8%
	Filipino	2.4%
	New Zealander	2.4%
	Japanese	2.1%
	South Korean	2.1%
	Scottish	2.1%
	Macedonian	2.1%
	Swiss	1.4%
	American	1.0%
	Indian	1.0%
	Dutch	1.0%
	Czech	0.7%
	French	0.7%
	Norwegian	0.7%
	Portuguese	0.7%
	Italian	0.7%
	Argentinean	0.7%
	Sudanese	0.7%
	Spanish	0.3%

The results from examining respondents' completed questionnaires regarding their geosite experience at Crystal Cave and The Pinnacles in Australia showed that most of them (59.4%) had not used any source of information about either site before undertaking their trip, whereas (40.6%) of them sourced information about the sites.

Most respondents in Australia relied on the Internet (42%) as their main source of information, followed by guidebook information (24.4%). Only one respondent used the Newspaper (0.3%) to seek information about the site (Figure 4.6).

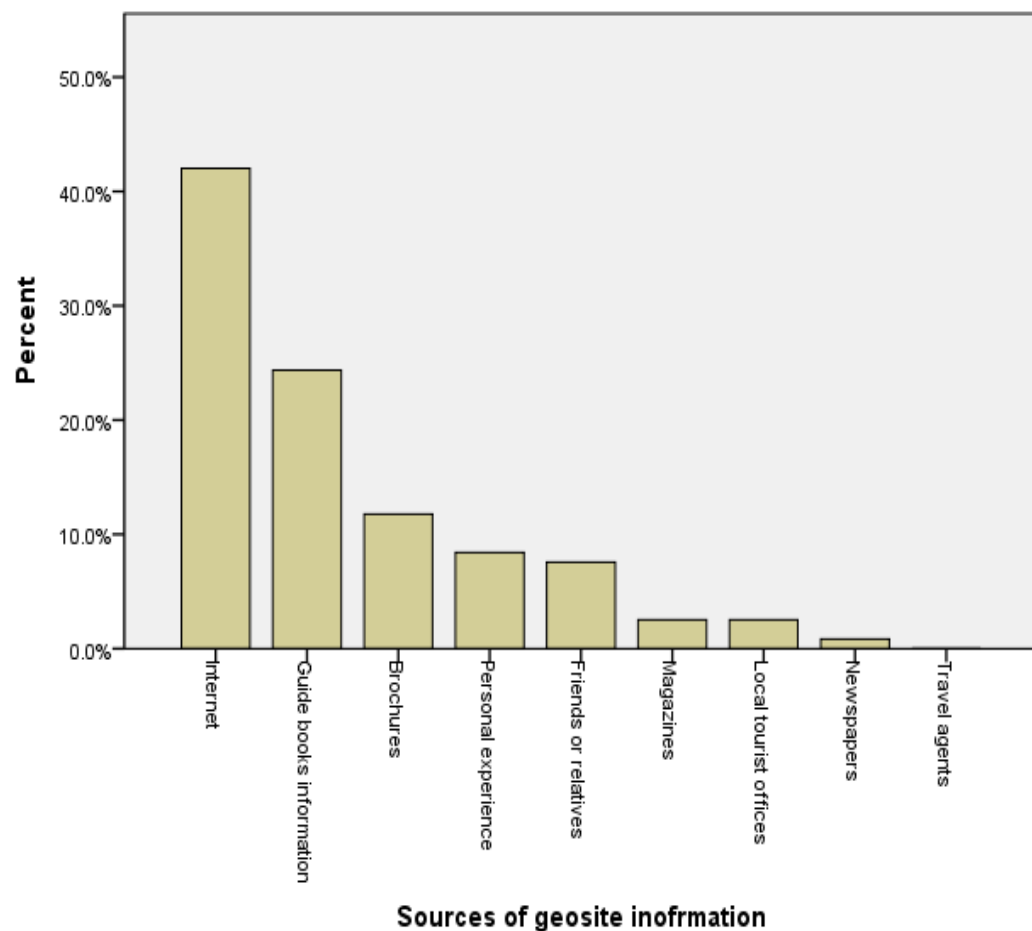


Figure 4.6: Sources of information for the respondents in Australia

The mean scores of intrinsic motivation for the respondents at both sites ranged from 2.37 to 3.71. Overall, the standard deviations for the items measuring intrinsic motivation ranged between 1.01 and 1.42. The highest mean scores for intrinsic motivation were:

- Knowledge (M = 3.71, SD = 1.12).
- Enjoyment (M = 3.66, SD = 1.08).
- Sense of wonder (M = 3.54, SD = 1.18).
- Relaxation (M = 2.97, SD = 1.24).

Table 4.35: The Results of the Intrinsic Motivation Measurement for the Respondents in Australia

Measures	Mean	SD	Number of responses (n =288)
Factor 1: Knowledge	3.71	1.12	285
To learn new things	3.70	1.15	286
To increase my knowledge	3.72	1.10	285
Factor 2: Relaxation	2.97	1.24	284
To relax and rest	3.03	1.27	285
To refresh my mental and physical state	2.91	1.21	284
Factor 3: Escape	N/A	N/A	N/A
To escape from the daily life routine	3.45	1.20	285
Factor 4: Enjoyment	3.66	1.08	284
It is exciting	3.84	1.01	285
To have fun	3.48	1.16	284
Factor 5: Friendship	2.31	1.32	283
To meet people with similar interests and hobbies	2.37	1.22	283
To travel with friends and my family	3.25	1.42	285
Factor 6: Sense of Wonder	3.54	1.18	284
Because it is an exotic place	3.11	1.22	285
To explore new places	3.98	1.14	284

For extrinsic motivation, the mean score for the research cohort ranged from 2.01 to 3.78. The standard deviations for the items measuring extrinsic motivation ranged between 1.07

and 1.24. The highest mean scores for the extrinsic motivations items were: extrinsic motivation (M= 3.41, SD= 1.12); and introjected extrinsic motivation (M= 2.70, SD= 1.19).

Table 4.36: The Results of the Extrinsic Motivation Measurement for the Respondents in Australia

Measures	Mean	SD	Number of responses (n = 288)
Identified	3.41	1.12	284
Because it has many social, cultural and recreational advantages for me	3.05	1.07	284
Because I believe it is personally important to me to travel to the site	3.78	1.18	284
Introjected	2.70	1.19	284
In my life I need this type of tourism activity to be happy	2.80	1.24	284
I must be occupied with activities	2.60	1.14	284
External regulation	2.08	1.20	284
To show others that I am a distinct person	2.16	1.20	284
Because my family and friends tell me to do this activity	2.01	1.21	284

The amotivation mean scores ranged from 1.77 to 1.92, and the standard deviations were between 1.18 and 1.30. Most respondents at both sites in Australia had a low level of amotivation. Overall, the mean scores of the intrinsic motivations items were larger than those of both the extrinsic motivation and amotivation dimensions.

Table 4.37: The Results of the Amotivation Measurement for the Respondents in Australia

Measures	Mean	SD	Number of responses (n = 288)
Not by choice; I don't care about this type of tourism activity	1.92	1.23	284
I don't really know; I don't think that this type of tourism suits me	2.07	1.30	283
Honestly, I don't know; I think that I wasted my time in this type of tourism activity	1.77	1.18	284

The mean score of three basic psychological needs, autonomy, competence and relatedness, were rated from 1.85 to 4.01 while the standard deviations for the BPNS items were

measured as being between 1.03 and 1.25. The highest mean scores were autonomy (M = 4.01, SD = 1.19) and competence (M = 3.14, SD = 1.11).

Table 4.38: The Results of Needs Satisfaction Items for the Respondents in Australia

Measures	Mean	SD	Number of responses (n = 288)
Autonomy	3.28	1.19	282
That my choice of visiting this geosite is based on my true interests and values	4.01	1.04	285
Pressured at this place (R)	2.91	1.25	282
That there is not much opportunity for me to decide for myself where I want to visit (R)	2.94	1.29	282
Competence	3.14	1.11	280
That people I know tell me I am good at choosing tourist sites	4.01	1.03	281
That most times I feel a sense of accomplishment from what I do	3.56	1.08	285
That I have been able to learn interesting new skills	1.85	1.22	282
Relatedness	2.57	1.19	282
That people at this place were friendly towards me	3.25	1.09	283
That I like the people I am travelling with	3.21	1.25	282
A strong sense of intimacy with the people I spent time with	1.92	1.23	282
That the people I travel with do not seem to like me much (R)	1.93	1.21	283

4.4 Comparison of the results between tourists to geosites in Jordan and Australia

This section compares the results of tourists' motivations and need satisfaction between tourists to the geosites being studied in Jordan and Australia.

4.4.1 Tourists' motivations

The comparative analysis of the intrinsic motivation of the respondents in Jordan and Australia is depicted in Figure 4.7. Intrinsic motivation for the respondents in Jordan differs from that of respondents in Australia in a number of respects. For example, escape from the daily life routine was the first and main intrinsic motivation for the respondents in Jordan, whereas, gaining knowledge was the first intrinsic motivation for their counterparts in Australia. The second factor, enjoyment, was similarly reported by respondents in both Jordan and Australia.

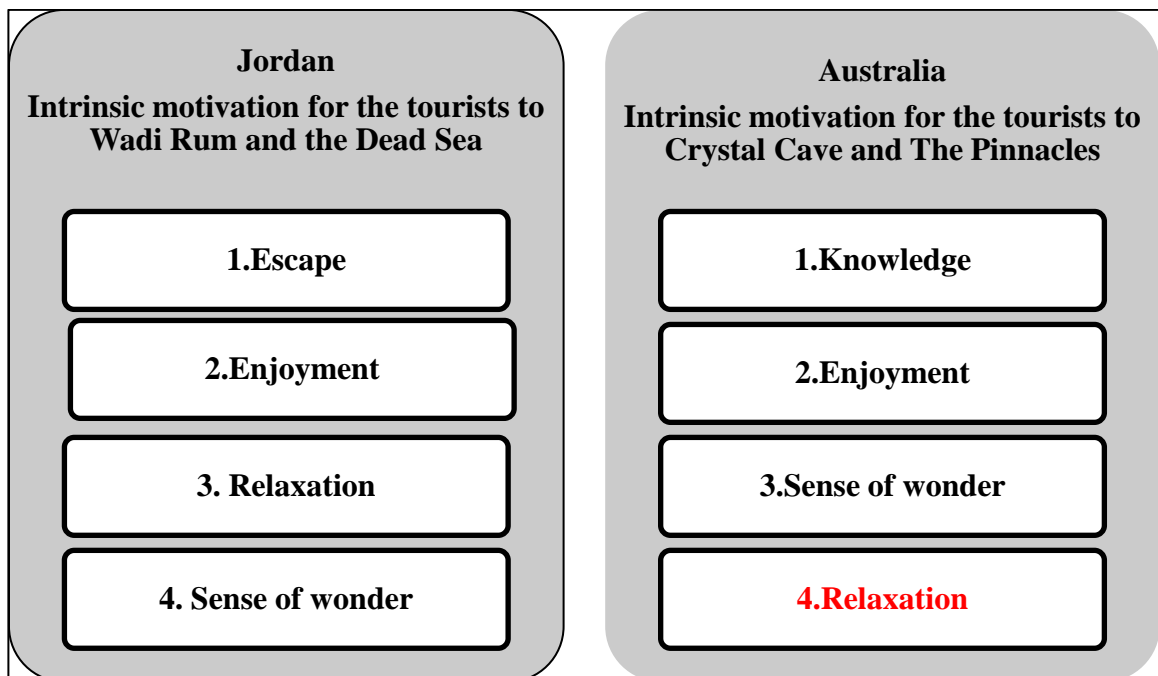


Figure 4.7: Comparison of intrinsic motivation between tourists to geosites in Jordan and Australia

Regarding the extrinsic motivation factors, the extrinsic motivation item was the most frequent type of extrinsic motivation factor for the respondents both countries, while external regulation item was the second factor for geotourism participants in Jordan compared with the introjected items of extrinsic motivation for those participants in Australia.

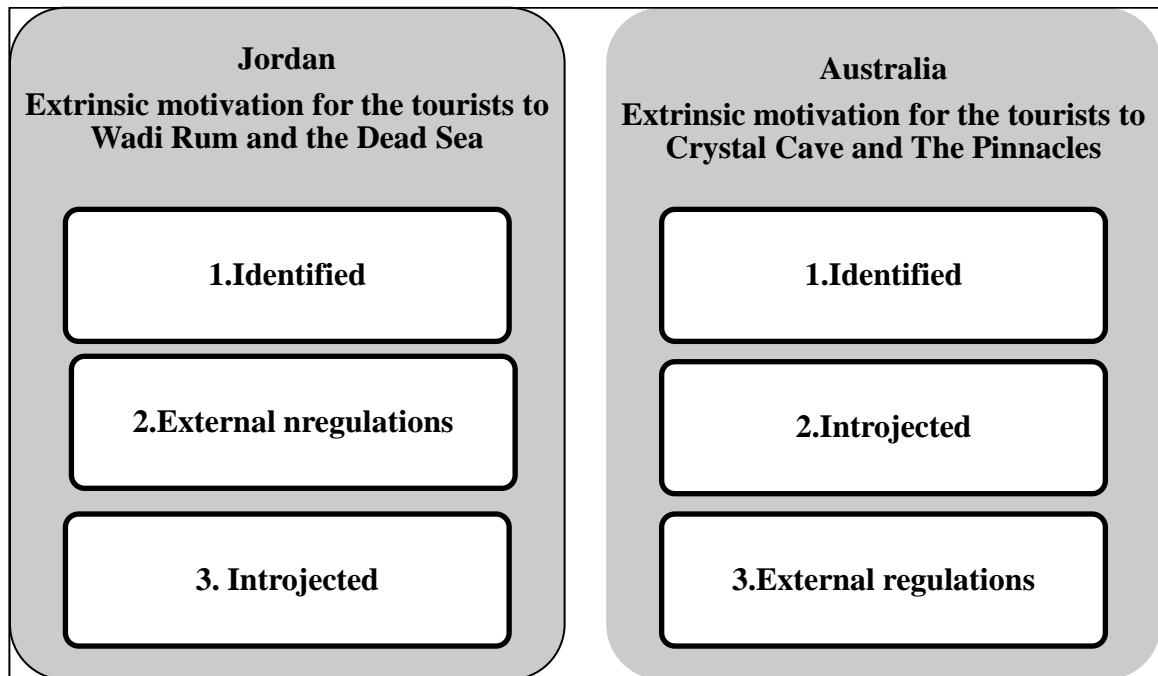


Figure 4.8: Comparison of extrinsic motivation between tourists to geosites in Jordan and Australia

The results of the amotivation items obtained from analysing the questionnaires returned in Jordan were similar to the results those obtained from the Australian research cohort. Thus, the first amotivation item for the respondents in both countries was, ‘I don’t really know; I don’t think that this type of tourism suits me’. The second item amotivation item was, ‘Honestly, I don’t know; I think that I wasted my time in this type of tourism activity’ for those in Jordan, while in Australia the second amotivation item was differently stated, ‘Not by choice; I don’t care about this type of tourism activity’ (Figure 4.9).

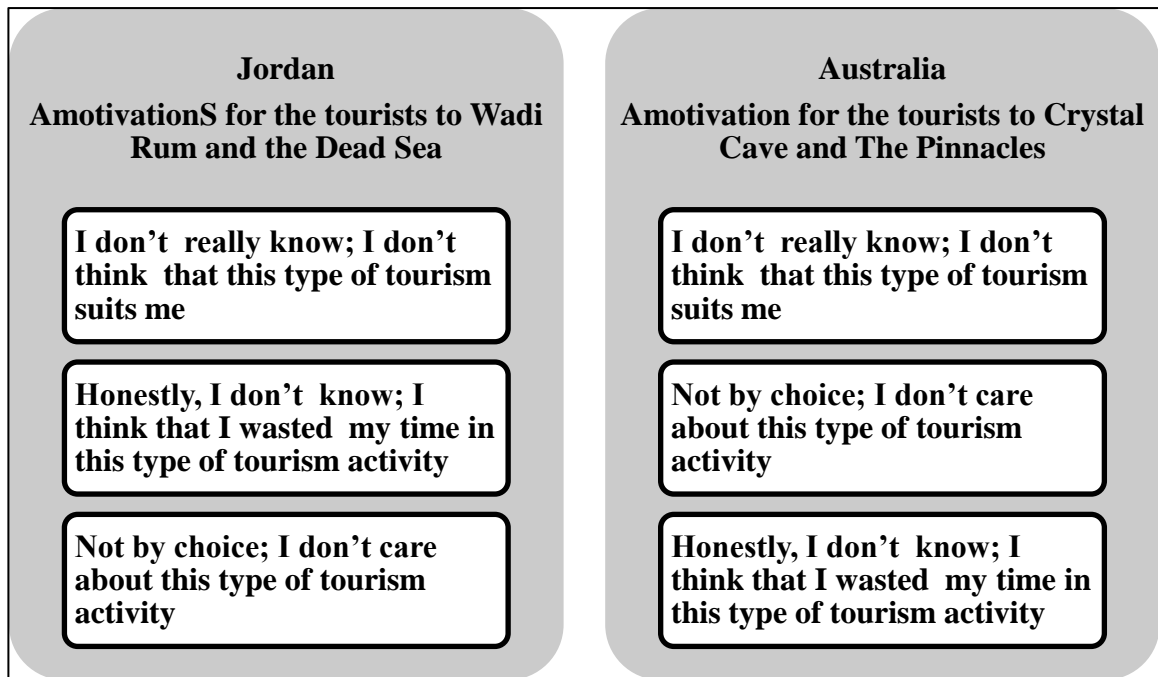


Figure 4.9: Comparison of amotivation between tourists to geosites in Jordan and Australia

Overall, it could be claimed that the strength of the intrinsic motivation for the respondents in the four sites in both countries was greater than that of extrinsic motivation. The amotivation state was the less frequently noted type of motivation in both countries.

4.4.2 Tourist needs satisfaction

The results for tourists' needs satisfaction were analysed from responses in both countries; they showed there to be extensive similarity between the respondents' needs satisfaction in both countries. However, autonomy was discerned to have the highest mean score for the respondents in both countries, followed closely by competence. The autonomy item (pressured at the site) had low mean scores in the both countries (Figure 4.10)

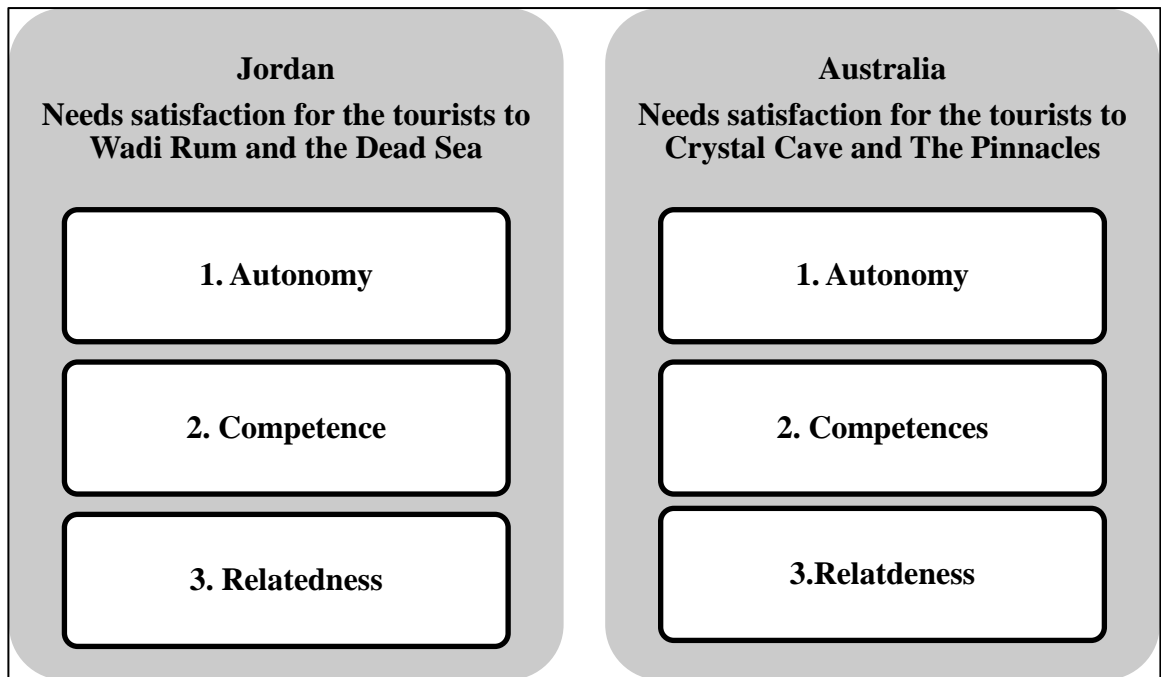


Figure 4.10: Comparison of needs satisfaction between tourists to geosites in Jordan and Australia

4.5 Conclusion of the results

Table 4.39 summarizes the main findings of this study, which includes the demographics, tourists' source of information about geosite, motivation (intrinsic motivation, extrinsic motivation, and amotivation), and needs satisfaction.

Table 4.39: Summary of the Findings of the Current Research

Category	My findings	Evidence			
		Australia		Jordan	
		Section	Page	Section	Page
Age	Mostly young	4.4.2.1	136-7	4.4.1.1	103-4
Gender	Male and female (almost equal distribution)	4.4.2.1	136-7	4.4.1.1	103-4
Education	Well-educated	4.4.2.1	136-7	4.4.1.1	103-4
Source of information	Internet	4.4.2.2	138	4.4.1.2	105
Intrinsic motivation	Escape, relaxation, enjoyment, sense of wonder, gaining knowledge	4.4.2.3	139	4.4.1.3	106
Extrinsic motivation	Identified regulation	4.4.2.3	140	4.4.1.3	107
Amotivation	Less amotivated	4.4.2.3	141	4.4.1.3	108
General motivation state	Intrinsic motivation is stronger more than extrinsic motivation	4.4.2.3	139-40	4.4.1.3	106-8
Needs satisfaction	High level of autonomy	4.4.2.4	141	4.4.1.4	109-10

4.6 Summary

This chapter has recorded the data collected and analysed after the deploying and return of on-site, hand delivered questionnaires to the research cohorts at the four geosites, Wadi Rum and the Dead Sea in Jordan, and Crystal Cave and The Pinnacles in Australia. The results showed the main intrinsic motivation, extrinsic motivation and amotivation of the tourists, the extent of their needs satisfaction, and the correlation and regression analysis between their motivations and behavioural intention to revisit these geosites. Additionally, the results presented the similarities and differences between the findings obtained from the geosites in both Jordan and Australia.

CHAPTER FIVE - DISCUSSION

5.0 Introduction

This study aimed to explore the motivation of a sample of tourists engaging in a geotourism experience and the relationship between their motivations and behavioural intention for repeating their visitation to a particular geosite. This quantitative study was conducted at four geosites, two in Jordan and two in Australia. The results arising from the analysis of the data are discussed in this chapter. Based on the study's research questions, this chapter discusses the source of information the tourists had used before undertaking their trip to the four sites. It investigates the intrinsic motivation, extrinsic motivation and amotivation, and the need satisfaction for the tourists undertaking their geotourism experiences at the four sites. This chapter also examines the relationship between the tourists' motivations and their behavioural intention to revisit the geosites, the differences and the similarities between the respondents' motivation. Finally, this chapter explores the implementation of self-determination theory in the geotourism context.

5.1 Geotourism participants' profile

The literature review identified that, although some studies have been carried out on geotourism, no single study exists that adequately covers the exact characteristics of tourists undertaking a geotourism experience. This study addresses some of gaps in knowledge through profiling the tourists visiting geological tourism sites in the four geosites in Jordan and Australia. The main indicators used were gender, age, education level and nationality.

5.1.1 Gender

The findings of this study did not show a clear gender difference between the respondents in both countries. Overall, the sample was almost equally represented by males and females. It could be argued that both males and females were similarly interested in engaging in the geotourism experience. The findings of the current study are consistent with those of Wight (2001) who found that the traditional domination of males in nature-based tourism activities

has changed and replaced by approximately equal representation by females. Wight (2001) noted that 55% of ecotourists in Australia were female. In this study, females represented 59% of geotourists in Australia and 44% in Jordan. It seems possible that this result is due to the gender empowerment of the local female tourists in Jordan. The local community context provides more freedom for males alone to travel to remote places like Wadi Rum than females on their own. According to Nazir and Tomppert , although Jordan has advanced significantly in gender equality matters, the government needs to go further in enhancing gender equality and ‘reframe’ the issues related to women’s rights, so that this ‘reframing’ is adopted specifically within the local cultural context.

5.1.2 Age

Based upon the results, 66.9% of the respondents in Jordan and 45.5% of the respondents in Australia were young (18-35). Thus, it could be deduced that geotourism activities have appeal for young people. The present finding is in accord with those of Kim *et al.*, (2008), which found that most of the people who visited the Hwansun Cave in Samchuk City, South Korea were aged 20–40 (77.5%). Furthermore, this finding matches many ecotourism studies that have found ecotourists to be either young or middle-aged (Butler & Hvenegaard, 1989; Meric & Hunt, 1998; Beeton, 1998).

5.1.3 Education level

This study revealed that the geotourists in both countries were well educated. The present findings seem to be consistent with Kim *et al.*, (2008) who found that most of tourists in the Hwansun Cave in Samchuk City in South Korea were well educated. Furthermore, this study produced results, which corroborate the findings of a great deal of the previous work in profiling the ecotourists (Wight, 1996; Beeton, 1998; TIES, 2006). According to Beeton (1998) ecotourists worldwide are more educated than other types of tourists. She also found that 20% of the Australian ecotourists have been tertiary educated, whereas only 12% of Australian tourists generally have attended university. Furthermore, 34% of American ecotourists are better educated than other types of American tourist (29%). Elsewhere, the International Ecotourism Society, TIES (2006) found that the ecotourists in Europe are relatively well educated.

5.1.4 Nationality

This study reveals that most of the tourists at the geosites surveyed in both countries were domestic tourists or regional tourists. According to the United Nations World Tourism Organisation, UNWTO (2011), domestic tourism is defined as the “activities of a resident visitor within the country of reference, either as part of a domestic tourism trip or part of an outbound tourism trip”, whereas regional tourism is the influx of tourists between countries of the same region. UNWTO has classified the world into different regions: Africa, Americas, Europe, East Asia and Pacific region, Middle East, and South Asia (Agarwal & Upadhyay, 2006).

In Jordan, most of the respondents were domestic tourists and the majority of the other tourists were regional tourists from the Middle East. Intraregional tourism has increased in the Arab world in the last decade thus playing a vital role in decreasing the negative effects of political crises in the region. More than 40% of the tourists in the different tourism destinations in the Middle East were from within that region between 2003-2004 (Erdmann, Pitigala, & Ziadeh, 2009).

Domestic tourism in Australia is one of the biggest financial contributors to its economy; it plays a vital role in developing and sustaining the infrastructure and superstructure for the tourism industry in there, particularly for the regional areas (Athanasopoulo & Hyndman, 2008). In Western Australia, the rate of domestic tourists in 2009/2010 was 68% of the total visitors; they spent about 54% of the total spending, about \$6.6 billion (Tourism Research Australia, 2011).

In Australia, most of the international tourists in the current study were from a variety of locations: England, Germany, Vietnam, Canada, Philippines, New Zealand, Japan, South Korea, Scotland and Macedonia. The Australian Bureau of Statistics (2011) indicates that the top five origins of visitors to Western Australia in 2009/2010 were United Kingdom, Singapore, Malaysia, Japan and New Zealand (Table 5.1).

Table 5.1: The Top Five Origins of Visitors to Western Australia in 2009/2010

Australian Bureau of Statistics		Nationalities represented in the current research	
		Nationality	Percentage of visitors
Nationality	Percentage of visitors		
United Kingdom	19	England	21.5
Singapore	18	Germany	11.1
Malaysia	13	Vietnam	3.5
Japan	6	Canada	2.8
New Zealand	5	New Zealand, Japan, South Korea, Scotland and Macedonia	2.1

Source: Adapted from Australian Bureau of Statistics (2011) and figures in the current study

According to Dann (1993) data related to tourist nationality must be interpreted with caution because many tourists have more than one specific nationality and their countries of origin may be different from their countries of nationality. In addition, some countries lack national identity after reforms of their political order such as South Africa, USSR, Yugoslavia and Iraq. Some countries have a high proportion of citizens who are immigrants, such as Australia, United States of America and Canada. Other countries have multiple cultures such as India and Brazil. It is understandable that some citizens of countries such as these do not have one collective identity or culture.

Overall, this study provides a segmented profile of tourists undertaking a geotourism experience. To sum up, the socio-demographics for this specific and identifiable tourist segment were young (18-35), well educated, significantly domestic (66.4% in Jordan and 42% in Australia), and international tourists. A better understanding of the socio-demographics for these tourists can help those in the tourists industry to enhance the attractiveness of the geological tourism sites by designing appropriate and appealing tourism products and services for this identifiable tourism segment.

5.2 The main Research Question

This section discusses the findings relating to the main research question, which is:

What are the different types of motivation (intrinsic motivation, extrinsic motivation and amotivation) for tourists undertaking a geotourism experience, and how do these motivations correlate with their desire to revisit the geosite?

5.2.1 Intrinsic motivation

It is important to understand tourist motivation because it is at the core of tourist behaviour. Until now, very little has been written in the literature about the motivations of tourists undertaking a geotourism experience. Intrinsic motivation reflects people's natural tendency toward the state of being assimilated, mastering, spontaneous interest, and discovery to enhance the cognitive and social growth to achieve enjoyment and vitality over life (Ryan & Deci, 2000). Based on the SDT perspective, intrinsic motivation includes performing an activity for its own sake and to achieve "the spontaneous experience of interest and enjoyment" rather than seeking an external reward (Deci, 2004, p. 4). In the light of the above discussion, the SDT perspective is appropriate for those seeking a geotourism experience because the motivation for it relates to an internal need and desire that originates from oneself more than from being aroused by external rewards or stimulators. According to Page (2007), in the context of intrinsic motivation, each tourist has particular distinctive needs that invoke him/her to engage in a tourism activity.

The quantitative results of this study showed that the major intrinsic motivations for tourists undertaking the geotourism experience in the four study areas were:

- Escape from the bustle and hustle of the daily life.
- Relaxation
- Enjoyment
- Sense of wonder
- Knowledge gain.

This study produced results, which accord with the findings of previous studies in this field, which have suggested that geotourism is a combination of learning, education, appreciation

and sense of wonder. Dowling and Newsome (2006) stressed that geotourism is a ‘sense of wonder, appreciation and learning’. The findings of this study resemble the characteristics of geotourism defined by Dowling and Newsome (2010, p. 4), who noted that geotourism is “An understanding of earth sciences through appreciation and learning. This is achieved through independent visits to geological features, use of geo-trails and view points, guided tours, geo-activities and patronage of geosite visitor centres”.

Hose (2008) argued there are two major types of geotourists: recreational and an educational. Joyce (2006) considered the geotourist as a normal visitor but who is interested in one or more parts of geology. Larwood and Prosser (1998, p. 98) asserted that geotourism involves tourists, "travelling in order to experience, learn from and enjoy our Earth heritage".

The findings of this study corroborate the thoughts of Qiumei and Zhenzjia (2006), who suggested that geological tourism attractions could enhance the enjoyment of understanding and recognition of the universe, broaden the tourists’ minds, maximize the ego values by a bundle of different tourism activities and sightseeing, and lessen or eliminate the feeling of agony. The findings of this study are somewhat congruent with those of Kim *et al.*, (2008) who found there to be four motivational factors: escape, knowledge, socialization and novelty for tourists engaging in a cave tourism experience. This also accords with the earlier observation in this study (see page 30), which showed that a geotourist is an individual who is going to a site with geological or geomorphic characteristics for viewing at the site thereby gaining knowledge about its features.

Prior studies have noted the importance of intrinsic motivation in stimulating tourists to act out and otherwise perform their different activities. Sharpley (2006) reviewed the literature of intrinsic tourism motivation finding that, despite the difficulties of determining the specific intrinsic motivation in tourism experience, there is a set of well-known intrinsic motives:

- Ego-enhancement (Sharpley considered this motive as the prime and main drive for tourism and travel).

- Escape (avoidance)
- Self-evaluation
- Relaxation
- Enrichment of relationships.

The results of this study differ from Sharpley's (2006) conclusions, but they are broadly consistent with earlier geotourism studies for several rational reasons. On the one hand, Sharpley discussed the intrinsic motivation of tourism experiences in a broad sense. This broad claim did not take into account the specific nature of each type of tourism. On the other hand, the geotourism experience involves specific knowledge and educational motives, which include enhancement of the tourists' knowledge about different natural features, the cultural characteristics of the local community and the different means to preserve these characteristics (Farsani, Coelho, & Costa, 2010).

5.2.2 Extrinsic motivation

As noted in the literature review, SDT provides an important opportunity for tourism motivation to be investigated without the domination of such external effects as the social or the environmental context. Gagne and Deci (2005) explain the unique nature of extrinsic motivation within SDT, concluding that extrinsic motivation involves performing with full sense of identification, autonomy and volition. In the extrinsic motivation context, the results of this study indicate that the identification of intrinsic motivation was the first extrinsic motivation for the tourists. The identification of extrinsic motivation indicates that the reasons for undertaking any specific activity are incorporated within oneself. It is an internalized and self-determined action such that one performs an activity because it is judged to be valuable by him (Deci & Ryan, 2004). The tourists' responses show a high degree of agreement with the values and significance of their unique geotourism experience, such that they agree that geotourism has many social, cultural and recreational advantages for them; they also believe that it is personally important to them to travel to the site.

One unanticipated finding of the current study was that there was no any significant effect of external regulation on tourist motivation in the geotourism context. A possible explanation for this might be that a tourist has been propelled into the researched geotourism experience with a full sense of self-determined and strong intrinsic motivation. Ryan and Deci (2004) argued that external regulations of extrinsic motivation is the low form of autonomous for the extrinsic motivation and they are based on the traditional form of extrinsic motivation which includes performing an activity to attain outcome or avoid penalty. Another important finding was that little tourists agreed with the items of introjected extrinsic motivation. However, introjected regulation refers to inherent regulation which is controlled because one performs an action with feeling of stress and pressure to get ego-enhancement, avoid punishment or feel guilty (Ryan & Deci, 2000). Most of the tourist disagreed with engaging in geotourism activity because they need this type of tourism activity to be happy in their life or they must be occupied with geotourism activities.

What is surprising is that the strength of the intrinsic motivations to arouse the tourists to visit the geosites. It is apparent that motivation for a geotourism experience has stimulated by internal and personal needs more than by external motivations. This finding is consistent with that of Wearing & Neil (2009) who revealed that ecotourists concentrate on the intrinsic motivation more than the extrinsic motivation. Neulinger (1974) argued that most of the leisure studies indicated that leisure is intrinsically motivated and people experience it for its own sake, without expecting external rewards. This also accords with Fielding *et al.*, (1995) who investigated the motivation of tourists climbing Uluru in Australia and they found that intrinsically motivated climbers reported high level of enjoyment rather than achievement-motivated tourists.

5.2.3 The relationship between tourist motivation and their desire to repeat visitation

According to Hong, Lee and Jang (2009), repeat visitation has been considered as an area of interest in the tourism literature because the repeaters provide significant benefits for the destination and tourism industry. The construct of behavioural intention is considered as a fundamental factor, which correlates positively with the observed behaviour. Thus, a better explanation or prediction of the intention may lead to a better understanding the behaviour .

As previously discussed, investigating the behavioural intention to repeat a visit to a geosite is a very significant and urgent need for the geotourism phenomenon. This study employed the intention behavioural battery developed by Zeithaml, Berry and Parasuraman (1996) to measure the intention to repeat visitations to geosites. This battery includes five dimensions: loyalty to company (loyalty), propensity to switch (switch), willingness to pay more (pay more), external responses to problems (external responses) and internal responses to problems (internal responses).

Guided by self-determination theory, the intention to repeat a visit to a geosite is a fundamental characteristic of any motivated behaviour, and the scope of intention to engage in behaviour can enhance motivation toward this behaviour. Therefore, conceptualising the intention is based on three functions: yearning outcome; deeming that the behaviour is involved in achieving an outcome; and owning the required competencies to perform the behaviour (Deci & Ryan, 2004).

In this study, the investigation of the relationship between geotourism participants and their behavioural intentions to visit geosites repeatedly was twofold. First, by calculating Pearson's bivariate correlations between the different motivational types explicated above (intrinsic motivation, extrinsic motivation and amotivation), and behavioural intention measures to check the correlations between these constructs. Second, by conducting a series of linear regression analyses to examine the relationships between tourist motivations (intrinsic, extrinsic and amotivation) and their behavioural intention of to revisit geosites. The dimensions of behavioural intention served as the dependent variables, whereas for intrinsic motivation, extrinsic motivation and amotivation were entered as the independent variables.

5.2.3.1 The correlation between the tourism motivations and behavioural intentions to revisit geosites

The results of Pearson's bivariate correlations for the four sites surveyed indicated there to be a significant positive correlation between the nearby constructs, such as the more self-determined motivations (intrinsic motivation, identified extrinsic motivation and introjected motivation) and between the non self-determined motivations (amotivation and external regulations). Correspondingly, there was a weak and negative correlation between the opposite and orthogonal constructs such as the highest self-determined motivation (intrinsic motivation) and the least self-determined (amotivation). This finding corroborates the findings of Vallerand and Bissonnette who suggested that the correlations between subscales of the SDT showed 'a simplex structure'. Thus, there have been positive correlations among the 'adjacent concepts', and the level of positive correlation is decreased increasingly according to an increase in the distance between the concepts on the continuum of the SDT.

The results of the correlation between the types of motivations and the behavioural intention to repeat visitation to geosites revealed there were significant positive correlations between intrinsic motivation, identified extrinsic motivation and introjected extrinsic motivation with loyalty, whereas this was not the case for switch and external and internal responses. Amotivations and external regulations were weakly and negatively correlated with loyalty and pay more, whilst they were correlated positively with switch. In other words, the self-determined motivations showed more positive consequences, which were varying according to the level of the type of motivation on the continuum of the self-determined behaviour. Likewise, Vlachopoulos, Karageorghis and Terry postulated that "more self-determined forms of motivation are expected to correspond with more positive outcomes, whereas less self-determined forms correspond with more negative outcomes".

5.2.3.2 The regression analysis between tourists' motivations and their behavioural intentions to revisit geosites

Intrinsic motivation, extrinsic motivation and amotivation were entered as the independent variables and the behavioural intention was entered as the dependent variable. The purpose of the regression analysis was to predict the relationship between the tourists' motivations and their behavioural intentions to visit geosites repeatedly.

Intrinsic motivation vs. behavioural intention

The study revealed that the behavioural to repeat visitation to the geosites was significantly predicted by the intrinsic motivation. This result may be explained by the fact that, while most of the tourists who look for relaxation and enjoyment prefer to revisit the same and familiar destination, those who seek the gaining of knowledge or are motivated by a sense of wonder may prefer to visit new and exotic destinations. This idea was supported by Gitelson and Crompton (1984) who found that most of the repeat tourists were seeking relaxation and non-repeat tourists were searching for new cultures and new tourism experiences. Li *et al.* (2008) suggest that repeat visitation is a potential reaction to the nature of modern life, which stimulates the tourists to seek familiarity and stability with the same destination for aesthetic or utilitarian purposes.

Extrinsic motivation vs. behavioural intention

The results of the current study showed that identified extrinsic motivation was a significant predictor for the behavioural intention, loyalty, to stimulate repeat visitation to geosites. A weak and negative relationship existed between extrinsic motivation and propensity to switch, internal and external response. These findings further support the notion of SDT that the most self-determined motivations, such as the identified regulation of extrinsic motivation, are linked to positive behavioural outcomes (Vallerand, 2001). In addition, SDT suggests that intrinsic motivation and autonomous kinds of extrinsic motivation, such as identified regulation of extrinsic motivation impel to positive consequences, functioning and efficient personal adjustment, and also endorse personal well-being (Hagger & Chatzisarantis, 2007). Following this, Vallerand, & Bissonnette (1992, p. 403) argued that "The relationship between extrinsic motivation and outcomes depends on the type of extrinsic motivation involved". These results differ from those of

Tsorbatzoudis *et al.* (2006) who found that amotivation, followed by the introjected regulation of extrinsic motivation, were the strongest predictors for the intention to participate in sport activities.

Amotivation vs. behavioural intention

It is interesting to note that in all four studies areas of this research there was a negative relationship between the amotivation and behavioural intention to revisit the sites; whereas there was a significantly positive relationship between amotivation and propensity to switch, and internal and external responses to problems. This finding is in agreement with Edmunds *et al.* (2008) who found that amotivation was negatively associated with behavioural intention in the exercise domain. Furthermore, Ntoumanis (2001) demonstrated that amotivation was a predictor of negative consequences when exploring the motivation of students in physical education. Furthermore, Thøgersen-Ntoumani and Ntoumani (2004) argued that amotivation was a negative predictor of intention to exercises. Elsewhere, Ryan & Deci argue that “When amotivated, a person’s behaviour lacks intentionality and a sense of personal causation”.

Taken together, these findings are congruent with the tenets of SDT (Deci & Ryan, 1985). The high self-determined motivation (intrinsic motivation and identified regulation in extrinsic motivation) with the satisfaction of inherent needs (autonomy, competence and relatedness) can predict more positive outcomes and high behavioural intentions to perform. According to Vallerand and O'Connor (1989), the potential consequences of these motivational types can be relevant to them for two reasons: first, the four motivational types are hypothetically ranked on a continuum from higher to least self-determination; second, there is a clear association between self-determination and ‘enhanced psychological functioning’. Therefore, it is expected that intrinsic motivation has the higher self-determined positive consequences, followed by self-determined extrinsic motivation. Non-self determined extrinsic motivation and amotivation are associated with negative consequences. The less self-determinate motivation (amotivation and external regulation) is

compatible with the dissatisfaction of one or more of the inherent needs; it can predict less adaptive behaviour and less intention to do a specific activity (Figure 5.1).

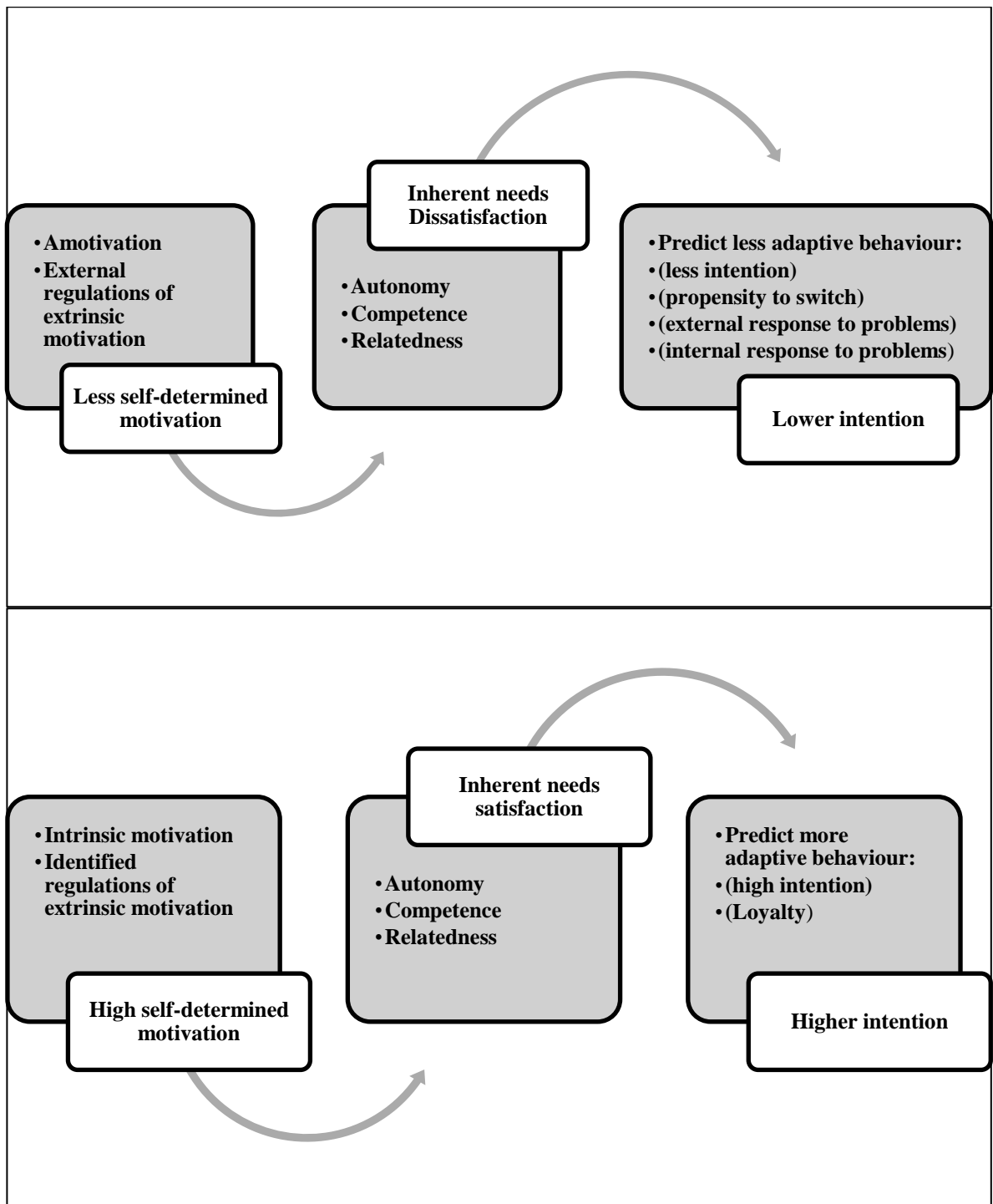


Figure 5.1: The outcome of the high self-determined behaviour and less self-determined behaviour

Overall, this study explains tourists' motivation to revisit geological tourism sites. Thus, the outcomes of this study provide a good insight into understanding the distinctiveness of the geotourism motivation and tourists' behavioural process, thereby enhancing segmentation of the destination market, and its positioning. According to Fodness (1994, p. 555), "effective tourism marketing is impossible without an understanding of consumers' motivations". The outcomes of this study can help the practitioners and marketers to develop the overall marketing and management of geotourism resources. For example, based upon the results of this research, the different intrinsic motivations (escape, relaxation, enjoyment, a sense of wonder and knowledge) motivate tourists to plan a trip to a geosite. This study provides empirical evidence that causal relationship exists between intrinsic motivations and the behavioural intention to revisit a geosite. This finding suggests that it would be meaningful to consider more the internal sources of tourists' motivation and their feelings and emotions, all of which increases their loyalty and leads them to revisit the geosite repeatedly.

This study also provides empirical evidence that there is a causal relationship between the identification of the extrinsic motivation and the behavioural intention to repeatedly visit a geosite. The majority of the tourists in this study agreed that a geotourism experience has many social, cultural and recreational advantages for them. This finding indicates that geosite competitiveness could be enhanced by considering the appropriate geosite activities and attributes which are allocated and delivered to the tourists. Greater understanding of both intrinsic and extrinsic motivation as well as the causal links can be useful for attracting potential tourists and retaining those existing.

5.3 Subsidiary Research Questions

This section discusses the findings concerning the subsidiary research questions, which investigate the amotivation state, sources of information, the three basic psychological needs and the applicability of SDT in a geotourism motivation context and differences in tourist motivation between countries.

5.3.1 Subsidiary Research Question One

What are the major reasons for the tourist to experience ‘amotivation’?

Amotivation is considered as a non self-determined type of regulation reflecting the absence of intention to undertake behaviour (Markland & Tobin, 2004). Amotivation includes acting without perceiving a contingency between performing the action and its consequences. One of the potential outcomes of amotivation is to leave the activity (Deci & Ryan, 2004). However, little attention has been paid to the amotivation state for different types of tourists. A possible explanation for this might be that undertaking a tourism experience needs preparation and requirements, such as booking a trip, finding appropriate accommodation, mode of travel and other physical activities. Therefore, most amotivated people will not undertake a trip or experience any tourism activity. Furthermore, it is a relatively difficult task to observe the behaviour and reactions of amotivated tourists. The amotivated tourists may also change their behaviour during the trip if they find a favourable outcome for their tourism activities.

In this study, the reasons for expressing the state of amotivation were that these tourists did not care about the type of tourism, the form of which does not suit them, and seen to be a waste of time. Few tourists endorsed items, which measured the amotivation state. The present findings seem to be consistent with other studies, which found that most respondents in different contexts have low amotivation to engage in behaviour (Ntoumanis, 2001; Baker, 2004; Spittle, Jackson, & Casey, 2009).

Whilst the geotourism experience showed high level of needs satisfaction in this study, the outcomes expressed low levels of the amotivation state and a lack of intention to engage in a geotourism experience. According to Deci and Ryan (2000), the absence of needs satisfaction pushes the amotivation state. This finding must be interpreted with caution. In many cases, international tourists do not like to express negative feelings toward their tourism experience because of its sensitivity, and the domestic tourists try to avoid a focus on negative opinions in order to improve the image of their tourism attractions and their own country.

Although this study provides evidence that a geotourism experience has low level of amotivation, it is important to take into account the negative outcomes of the amotivation

state for tourists. Therefore, this study further suggests a decreased rate of amotivated tourists is achieved by strengthening such self-determined behaviour as intrinsic motivation and identified external motivation, and weakening amotivation pressures. For example, the provision of a wide range of geotourism activities, which are appealing intrinsically, can offer opportunities for the tourists to experience fun, enjoyment, and gain personal rewards. According to Smith and Bar-Eli (2007, p. 157), “individual be amotivated when they do not perceive contingencies between outcomes and their own actions. They are neither intrinsically nor extrinsically motivated. They become nonmotivated”.

5.3.2 Subsidiary Research Question Two

Have tourists sought information to plan or prepare for their geotourism experience and, if so, what were the sources of this information?

This section discusses the findings relating to which sources of information about geotourism and geosites have been used by the tourists to plan their trip to the geosite. Fodness and Murray (1997) identified such information sources for the tourists as brochures, local tourist offices, state travel guides, magazines, newspapers, travel agents, friends or relatives and personal experience. However, very little was found in the literature on the question of usage of source of information by tourists before visiting a geosite. This study investigated the usage of information sources by tourists before undertaking their trips to the geosites. The results revealed that the primary source of information for respondents in Jordan and Australia was the Internet. This does not support previous research, which suggested that the main source of influential information for prospective tourists is relatives, family and peers (Bieger & Laesser, 2004; Richards, 2007; Gitelson & Crompton, 1983; Dey & Sarma, 2010). According to Tourism Research Australia (2011), the Internet was the main source of information for the domestic and international visitors in Western Australia in 2009/2010, followed by previous visit for the domestic visitors, and friends and relatives for the international tourists (Table 5.2).

Table 5.2: Top Three Information Sources for the Domestic and International Tourists Visiting Western Australia in 2009/2010

Top 3 information sources	Number of domestic visitors	Top 3 information sources	Number of international tourists
Internet	16,615	Internet	315
Previous visit	686	Friends or relatives	239
Friends or relatives	459	Previous visit	182

Source: Adapted from Tourism Research Australia (2011)

The study concludes that most geosite tourists prefer to use at least one information source about it before visiting. Moreover, the evidence obtained by this research proposes that the Internet plays a significant role in the manner by which tourists learn about targeted geological tourism sites before the proposed visit. Therefore, all manner of those involved in promoting tourism should pay attention to the Internet and its applications when developing marketing and communication strategies for targeted tourists. Tjostheim *et al.* (2007) suggest the Internet is used intensively in the tourism industry as a source of information because it saves time and costs as well as providing holistic and customized content of proposed tourism destinations for it. The use of the Internet throughout the world has grown rapidly. According to the Internet World Stats (2011), it is estimated that there are about 2,095,006,005 worldwide Internet users representing 30.2% of the world's total population (Table 5.3).

Table 5.3: World Internet Usage and Population Statistics / March 31, 2011

World regions	Internet users 31 Dec 2000	Internet users 3 Mar 2011	Penetration (% Population)	Growth (%) 2000-2011
Africa	4,514,400	118,609,620	11.4	2,5
Asia	114,304,000	922,329,554	23.8	706.9
Europe	105,096,093	476,213,935	58.3	353.1
Middle east	3,284,800	68,553,666	31.7	1,98
North America	108,096,800	272,066,000	78.3	151.7
Latin America/ Carib.	18,068,919	215,939,400	36.2	1,03
Oceania/Australia	7,620,480	21,293,830	60.1	179.4
World Total	360,985,492	2,095,006,005	30.2	480.4

Source: Adapted from Internet World Stats (2011)

Then, as this study confirms the growing significance of the Internet for sourcing travel information, different online tools in promoting geotourism should be explored including such social networking as, Facebook and MySpace that now play vital roles as information sources for tourists (Xiang & Gretzel, 2010).

5.3.3 Subsidiary Research Question Three

Does the geotourism experience satisfy the three basic psychological needs of the self-determination theory (autonomy, competence, and relatedness)?

This section discusses the findings related to the satisfaction of the three basic psychological needs for the tourists at the four sites.

In the context of self-determination, the inherent needs postulated are autonomy, introjected and relatedness. These distinctive needs are enhanced and developed by the tourist engaging in an interesting activity. People intrinsically motivated should have the satisfaction of autonomy and competence needs (Ryan & Deci, 2000). In the tourism

context, understanding the relationship between motivation, tourist satisfaction and loyalty can ensure the success of the tourism marketing (Yoon & Uysal, 2005).

The results of this study showed that the geotourism experience at the two sites each in Jordan and Australia represented a high level of fulfilment of tourists' needs for the autonomy, competence and relatedness, consistent with SDT. According to Deci and Ryan (2004), there is a clear connection between satisfaction of the fundamental needs, and enhancing and maintaining intrinsic motivation and internalization.

This finding has practical use for assessing the basic needs of tourists who are not being sufficiently satisfied. Therefore, strategies can be developed to help these tourists to overcome their deficits in needs satisfaction. Moreover, assessment of the needs satisfaction can be helpful for evaluation of the effectiveness of geotourism's products, services and activities to fulfil the tourists' needs. According to Johnston & Finney (2010, p. 294), "a quality measure of needs satisfaction could be used to evaluate the effectiveness of programs, counselling [sic], or support services targeted towards increasing the fulfilment of needs".

5.3.4 Subsidiary Research Question Four

Is the Self-Determination Theory appropriate for investigating tourists' motivation in a geotourism context?

This section discusses the findings concerning the viability of SDT for exploring tourists' motivation in the geotourism context. The literature review informs that geotourism is a new form of sustainable tourism (Joyce, 2006) which enhances education-based tourism, applies the notions of sustainability and supports local content (Komoo & Patzak, 2008). Additionally, "It promotes tourism to geosites and the conservation of geo-diversity and an understanding of earth sciences through appreciation and learning" (Dowling & Newsome, 2010). Very few references were found in the literature as to the question of why people travel to a geosite and what their motivations are for engaging in geotourism experiences.

This research suggests that one viable theory for studying geotourism motivations is SDT. Following this study, it could be further argued that SDT is appropriate for exploring tourists' motivations in the geotourism context for several reasons.

Firstly, in this study SDT facilitated the identification of the different types of geotourist motivations and their psychological basic needs. All geotourist motivations fell within this broad continuum of motivation from the most self-determined behaviour, (intrinsic motivation) to the less self-determined, (amotivation). Thus, SDT could be considered as a macro theory of different human motivations. It provides insight and full vision on the different basic issues of "personality development, self-regulation, universal psychological needs, life goals and aspirations, energy and vitality, nonconscious [sic] processes, the relations of culture to motivation, and the impact of social environments on motivation, affect, behaviour, and wellbeing" (Deci & Ryan, 2008, p. 182).

Secondly, this study supports the applicability of SDT across cultures, gender and countries. Based on the findings there were clear similarities between the tourists' intrinsic motivation, extrinsic motivation, amotivation and needs satisfaction in both Jordan and Australia. Some significant differences were found between the different age categories, gender and nationalities at each geosite researched in the two countries. It could further be claimed that SDT is a universal theory, able to be used in any culture, country or gender. According to Valery (2011, p. 82), "SDT is built upon the assumption that autonomous motivation can be experienced by people all over the world". A considerable amount of literature has been published examining SDT across time, country, culture and gender. All humans need to fulfill the feeling of being autonomous or controlled in order to be healthy, regardless their culture, gender or country, although it is acknowledged that these needs may be satisfied and articulated within one culture in different ways according to age or different gender (Deci & Ryan, 2004).

Thirdly, SDT provides a clear limitation and differentiation between the different types of tourists' motivations to be intrinsically motivated, such as engaging in geotourism activities in order to attain an endogenous interest (enjoyment, relaxation, knowledge, wonder thrust, escape, and friendship), or to be extrinsically motivated, such as, undertaking a geotourism experience in order to gain a benefit or outcome, for example, because the experience has

many social, cultural and recreational advantages. Another significant differentiation in the SDT context is the difference between autonomous and controlled motivation. This distinction in quality of motivation is wider than intrinsic and extrinsic differentiation (Epstein & Manzoni, 2010). It can therefore be assumed SDT has been based on the differentiation between the qualities of the motivation rather than the quantity of these motivations. According to Vansteenkiste *et al.* (2006), the quality of motivation represents the kind or the type of motivation, which varies from intrinsic motivation (endogenously motivated), to extrinsic motivation (exogenously motivated).

Fourthly, integration of the psychological basic needs with the different types of motivation enhances knowledge about the nature and scope of human motivations. These universal needs are vital for understanding the effect of social forces and how interpersonal environments influence autonomous and controlled motivations, and why some behaviour endorses well-being, while others do not (Deci & Ryan, 2008). Thus, SDT provides an opportunity to enhance knowledge about the motivation of the tourists who undertake a geotourism experience and their behaviour by exploring the satisfaction of these needs for them. Moreover, the basic needs facilitated understanding of the socio-contextual role of tourists, such as their families, friends and peers, to enhance or undermine their autonomy and motivation. According to Deci and Ryan (2000, p. 5), “SDT posits that there are clear and specifiable social-contextual factors that support this innate tendency, and that there are other specifiable factors that thwart or hinder this fundamental process of human nature”.

Fifthly, in the light of SDT, the extrinsic motivation of tourists in this study involved their autonomous and internal power. Thus, the tourists engaged in geotourism activities because they not only sought attainment of external outcomes, but also because they believed it to be personally important to them to travel to the geosite. Thus, SDT provided a unique opportunity to explore extrinsic motivation with the clear effect of internalization, which was also present in extrinsic motivation. Thus, SDT extends the external motivation to include internal effects. According to Ryan & Deci (2000), unlike other motivation theories, SDT avers that extrinsic motivation can vary in the level of being autonomous which is then reflected in exogenous control or true self-regulation. Extrinsic motivation includes intentional behaviour but it is different in the degree of autonomy achieved.

Sixthly, SDT contributed to investigation of the amotivation state for tourists in the geotourism context. It could be further suggested that this distinctive feature be added to the elements of an appropriate tourist motivation as suggested by Pearce (2005). As illustrated in Table 5.4, SDT fulfills all the requirements of a viable tourist motivation.

Table 5.4: The Elements of an Appropriate Tourist Motivation

Element		Self-determination theory
1	The role of the theory	It is a micro theory of human motivation It provides broad continuum of motivations and needs
2	The ownership and appeal of the theory	A meta-theory for framing motivational studies It has been used by a large number of researchers from different countries It can provide a new orientation for future research in tourism literature
3	Ease of communication	The three psychological basic needs are universal Universally applicable
4	Ability to measure travel motivation	Validated and measured empirically in many domains It is amenable for qualitative and quantitative studies, for example, BPNS, AMS, SMS, LMS28 and other validated scales within SDT
5	A multi-motives versus single-trait approach	It has multidimensional theoretical structure Full coverage of three basic universal needs satisfaction
6	A dynamic versus snapshot approach	The dynamics of psychological need
7	The roles of extrinsic and intrinsic motivation	It differentiates the different types of motivation It concentrates on the quality of motivation more than its amount
*8	Determining lack of intention (amotivation state)	It is able to determine if the tourists are amotivated

Source: Adapted from Pearce (2005, p. 52).

* This element was added by the researcher

In summary, it seems reasonable to claim that SDT is an appropriate framework for studying the motivations of tourists in the context of geotourism. It is worthwhile to use this framework in different kinds of tourism marketing studies. According to the official website of SDT (2008):

By focusing on the fundamental psychological tendencies toward intrinsic motivation and integration, SDT occupies a unique position in psychology, as it addresses not only the central questions of why people do what they do, but also the costs and benefits of various ways of socially regulating or promoting behavior.

5.3.5 Subsidiary Research Question Five

Does the tourists' motivation differ between two countries in a geotourism context?

This section discusses the findings, which compare the motivation, and needs satisfaction between the research cohorts of tourists in Jordan and Australia. According to Kozak (2002), most of the previous studies of tourism motivation have not dealt with its differences between two groups or people at more than one destination. However, there is no reliable evidence that geotourists' motivation is different between the tourists of two very different countries. This study explored the differences and the similarities of the geotourists' motivations and satisfaction of needs between people visiting the geosites in Jordan and Australia.

Results of this study show the highest intrinsic motivations in Australia to be a sense of wonder, enjoyment and knowledge with the lowest sense of motivation being friendship. Escape, enjoyment and relaxation were ranked as the highest of motivations for the geosites in Jordan, the lowest being friendship. Enjoyment was the common factor between intrinsic motivations in both countries.

Based on the comparison between tourist motivations in both countries, it is argued that the respondents in Australia were allocentric tourists who prefer to travel to unusual places and explore new places; on the other hand, the respondents in Jordan were psychocentric who prefer travel to familiar mass tourist destinations, such as Wadi Rum and the Dead Sea.

These extrinsic motivation findings reveal the identified regulation of extrinsic motivation to be dominant. Contrary to expectations, this study did not find a significant effect for the external regulations on the tourists' motivation in both countries. This type of extrinsic motivation is considered as the traditional type of external motivation in the literature and it is located at the end of the continuum of non-self-determined because it the less self-determined kind of extrinsic motivation (Deci & Ryan, 2004). The tourists in both countries

expressed high levels of intrinsic motivation, which are not well matched with the external regulations. This accords with Vlachopoulos and Karageorgh (2005), in that, while the external regulation is considered as an extremely controlling kind of motivation, the intrinsic motivation is highly self-determined, and therefore there has been incompatibility between them.

The results of this study did not show any significant difference between the amotivation states of respondents in both countries. They had very low amotivated scores in both countries. Until now, there has been only limited number of studies recorded in the literature on the issue of comparing amotivation between two countries. Thus, this result could not be compared with or validated by results from previous studies.

The results of needs satisfaction were similar in both countries. This finding seems to be consistent with other SDT premises that the three basic needs of autonomy, competence, and relatedness are universal. According Deci *et al.* (2001), the study of basic psychological needs may be applicable across quite different cultures with divergent political, economic and value systems. The need for autonomy was ranked as the highest need in both countries. This similarity accords with the Lynch et al. (2009) study, which concluded that universality of the autonomy need was cross-cultural. They had studied China, Russia and United States in which the relationship between perceived autonomy support and self-concept was investigated.

5.4 Summary

The study found there to be a specific group of tourists who could be considered as geotourists based on their demographics and motivations (Table 5.5). Taken together, this study identified the demographics of this specific group of tourists, their sources of information before undertaking their trip, their intrinsic and extrinsic motivation, their amotivation, and the satisfaction of their basic psychological needs. Pralong (2006) asserts there are specific targeted groups, such as seniors, families and schools whose needs and wants are satisfied by geotourism activities. In addition, this new trend of tourists' preferences for geological and geomorphic attractions is related to the diversification and evolution of the tourism demand focusing on the environment, education and entertainment

in the first of 21th century with the subsequent emergence of experienced tourists. Based upon the findings of the current research, this specific segment of geotourists shares some distinctive characteristics.

Table 5.5: Summary of the Discussion

Category	My findings	Other studies in geotourism context		Other studies in other contexts	
		Accord	Disaccord	Accord	Disaccord
Age	Young	Kim <i>et al.</i> , 2008		Butler & Hvenegaard, 1988; Meric & Hunt, 1998; Beeton, 1998	
Education	Well-educated	Kim <i>et al.</i> , 2008		Wight, 1996; Beeton, 1998; TIES, 2006	
Gender	Almost equally represented (male and female)	Kim <i>et al.</i> , 2008		Wight, 2001	
Source of information	The Internet	No previous studies			Bieger & Laesser, 2004; Dey & Sarma, 2010
Intrinsic motivation	Escape from the daily life routine, relaxation, enjoyment, sense of wonder and gaining knowledge	Dowling & Newsome, 2006, 2010; Hose, 2008; Joyce, 2006; Larwood & Prosser, 1998			Sharpley, 2006
Extrinsic motivation	Identification regulations of extrinsic motivation	No previous study		Deci & Ryan, 2004	
Amotivated	Low level of amotivation	No previous studies		Ntoumanis, 2002; Baker, 2004; Spittle <i>et al.</i> , 2009	
Needs satisfaction	High level of satisfaction, of need of autonomous	No previous studies		Deci & Ryan (2004)	
Strength of motivation	Concentration on their internalization and intrinsic motivation more than their extrinsic motivation	No previous studies		Wearing & Neil, 2009	
Self-determination motivation	High self-determination motivation	No previous study		Deci & Ryan, 1985	

CHAPTER SIX - CONCLUSION

6.0 Introduction

This chapter provides the conclusions of the study. It summarizes the key findings drawn from the data analysis of the study and relates its contribution to the existing tourism literature. It also considers the implications for future studies and outlines the limitations of this study.

6.1 The research objectives and the key findings of the study

This research was designed to explore the intrinsic motivation, the extrinsic motivation, and amotivations of a large sample of tourists undertaking a geotourism experience in Jordan and Australia. The study also examined the nature of the relationship between the tourists' motivations and behavioural intentions to repeat visits to a geosite. Additionally, it explored the sources of information sought by the tourists before visiting a geosite. It also investigated the satisfaction of the tourists' basic psychological needs (autonomy, competence and relatedness) when they engage in a geotourism experience. Furthermore, this study tested the viability of self-determination theory (SDT) for investigating the motivations of tourists in the geotourism context. Finally, it compared the motivation and psychological needs satisfaction of the research cohorts of tourists in Jordan and Australia.

The main objectives of this study were to investigate the motivations of tourists who undertake a geosite experience; to develop motivational profiles for this new distinctive form of tourism; and to explore how the outcome of this experience led tourists to repeat the visit to the geosite. To pursue these ends, the researcher applied validated and reliable scales, which have been broadly used in different domains of life to measure the motivations and behavioural intentions of tourists. Using SDT as an organizing framework, the researcher found that the main intrinsic motivations for the study respondents in Jordan and Australia were:

- Escape from the hustle and bustle of the daily life routine
- Relaxation
- Enjoyment

- Sense of wonder
- Knowledge gain.

These findings were corroborated by the findings of previous studies (Larwood & Processor, 1998; Dowling & Newsome, 2006, 2010; Joyce, 2006; Qiumei & Zhenzjia, 2006; Kim *et al.*, 2008).

This study found that the main extrinsic motivations for the respondents were:

- Identified extrinsic motivation
- Introjected extrinsic motivation.

This finding accords with SDT tenability, which has shown that self-determined behaviour involves identification of extrinsic motivation (Deci & Ryan, 2004). Furthermore, this study revealed that the respondents at the four geosites in Jordan and Australia expressed a low level of amotivation. These findings matched other studies, which have found that interesting activities, such as tourism, leisure, sport and exercise involve low levels of amotivation (Ntoumanis, 2001; Baker, 2004; Spittle, Jackson, & Casey, 2009).

The study also revealed that the tourists' intrinsic motivation and identification of extrinsic motivation had a significantly positive relationship with their behavioural intention (loyalty) to revisit the geosites, and a negative and weak relationship with their propensity to switch. More specifically, the results of the linear regression analysis indicated that the respondents' behavioural intention (loyalty) to repeat visitation to the geosites was significantly predicted by the intrinsic motivation. It also showed the participants' to identify extrinsic motivation as a significant predictor of their behavioural intention (loyalty) to repeat visits to the geosites. There was a significantly positive relationship between these tourists' amotivation and their propensity to switch, and internal and external responses to problems. These findings generally parallel the tenets of SDT in that identified regulation of extrinsic motivation is linked to positive behavioural outcomes (Vallerand, 2001).

The second research objective was to investigate the level of satisfaction of the three basic psychological needs of SDT in the geotourism experience. This study revealed the

geotourism experience in the four sites in Jordan and Australia to represent a high level of fulfilment of the need for the tourists' autonomy, competence and relatedness, which concurs with SDT; it indicates there to be a clear connection between tourists' satisfaction of their fundamental needs, while enhancing and maintaining their intrinsic motivation and internalization (Deci & Ryan, 2004).

The third objective was to investigate the sources of information used by the tourists to plan their trip to the geosite. This study confirms the primary source of information for the respondents in Jordan and Australia to be the Internet. This finding differs from the earlier research, which found the main source of influential information for the tourists to be relatives, family and peers (Bieger & Laesser, 2004; Dey & Sarma, 2010).

The study's fourth objective was to test the viability of SDT when investigating the tourists' motivation in the geotourism context. The findings clearly showed that SDT was a viable for this purpose. Furthermore, they indicated that SDT meets the seven criteria for an appropriate tourism motivation theory, as postulated by Pearce (2005).

The fifth objective was to compare the motivation and psychological need satisfaction in geotourism experience of the two countries (Jordan and Australia). Despite the differences in the intrinsic motivation, the findings showed a great deal of similarities for the extrinsic motivation, amotivation and the basic needs satisfaction of the two lots of respondents. These findings correspond with some studies which support the universality of SDT, such as Valery (2011).

The main objective of this research was to profile the tourists undertaking a geotourism experience. The findings indicated that the tourists in these research cohorts were from young to middle aged, international and domestic tourists, well-educated, and preferring to use the Internet as the main source of information as they focus on their intrinsic motivation more than extrinsic motivation.

6.2 Contributions to tourism literature

This study makes several significant theoretical and methodological contributions to the existing literature on tourism motivation. It has gone some way towards enhancing our understanding of tourists' motivations when engaging in a geotourism experience and their behavioural intention to repeat a visitation to a geosite.

First, the findings enhance our understanding of why people travel to a specific geosite. This important issue in the broader tourism literature is still an undeveloped area of study. Although the range of implementation of motivation studies in the tourism literature is abundant (Cohen, 1972, 1974, 1979; Plog, 1972; Crompton, 1979; Iso-Ahola, 1982; Dann, 1981, 1983; Bear & Ragheb, 1983; Mill & Morrison, 1985; Fodness, 1994; Veal, 1997; Kozak, 2004), studies of motivation of tourists engaging in a geotourism experience are uncommon.

Second, the findings add to our understanding of the behavioural intention of the geotourism participants to repeat visiting a geosite and of its relationship with different causal types of their motivation. The tourism literature lacks any studies similar to this one. Thus, this research has made a beginning toward filling this gap and provides additional evidence about the relationship between the motivations of tourists undertaking a geotourism experience and their behavioural intention to revisit a geosite.

Third, the present study makes several noteworthy contributions to the profiling of geotourism participants. It explored their demographic variables, their sources of information before undertaking their trip, their intrinsic and extrinsic motivation, their amotivation, the satisfaction of their basic psychological needs, and their behavioural intention to revisit a geosite. The authors of the geotourism studies did not pay sufficient attention to the main characteristics of geotourism participants (Hose, 1995, 1996, 1998, 2007, 2008; Larwood & Prosser, 1998; Buckley, 2003; Patzak, 2001; Macadam, 2003; Xunand & Ting, 2004; Gray, 2004; Slomka & Kicinska-Swiderska, 2004; Dowling & Newsome, 2006, 2010; Newsome & Dowling, 2010; Joyce, 2006; Amrikazemi & Mehrpooya, 2006; Reynard, 2004; Panizza & Piancante, 2008; Al Musharfi & Lawrence,

2008; Dowling, 2009; Borozinski, 2009; Komoo & Patzak, 2008; Sadry, 2009; Heggie, 2009; Farsani, Coelho & Costa, 2010).

Fourth, despite the breadth of application of SDT in such diverse life domains as education, exercise and sport psychology, the motivations of second language acquisition, leisure, nursing, human relationships, and religion, very few studies have used SDT as an organizing framework in tourism studies. Most of the researchers in the tourism field have investigated tourist motivation by using pull and push factors (Dann, 1977, 1981; Crompton, 1979; Zhang & Lam, 1999; Jang & Cai, 2002; Kim *et al.*, 2003). Further, this study could be claimed as the first to investigate the motivation for geotourism by applying SDT. Therefore, it will provide the findings from its baseline data for future studies on the implementation of SDT in the tourism and hospitality context.

Fifth, although the geological and geomorphic resources in the Middle East are abundant, minimal studies have investigated the different dimensions of geotourism in this area. Some studies have been completed but they do not focus on the geotourists in that area. For example, geotourism development in Sultanate of Oman has been studied (Dowling, 2008; Dowling & Newsome, 2006, 2010; Al Musharfi & Lawrence, 2008); geotourism to Iran has been researched (Amrikazemi and Mehrpooya, 2006; Sadry, 2009); and geotourism in Turkey has also been a focus (Yıldırım, & Koçan, 2008). However, geotourism studies in Jordan are an uncommon area of study. Thus, this study extends our understanding of geotourism and its tourists in the Middle East, in particular, Jordan.

6.3 Recommendations for further research

It is recommended that further research be undertaken in the following areas:

1. This study was undertaken at four geosites in two countries during specific times of the year. Future research could expand on the investigation of geotourists' motivation in different settings, countries, geosites, samples and times of the year in order to test and further generalise the findings.
2. A future study investigating whether the differences and similarities between geotourism motivations can vary according to the type of geosite, such as, cave, outcrop or

mountain would be very significant. Particularly, research could be directed to a geopark, which was not included in this study due to the cost and constraints considerations.

3. This study employed a model that was based on the inclination of the SDT tenets and the behavioural intention battery. It should be replicated in such other fields of study as ecotourism and other types of nature-based tourism because the tourism literature reveals that very few studies have used SDT as an organizing framework for investigating the motivation of different kinds of tourists.

4. Within the field of tourism, few studies have investigated the issue of the amotivation state for different types of tourists and travellers. Therefore, considerably more work could be done to study the nature and scope of amotivation for different kinds of tourism to better understand this phenomenon.

5. The tourism literature contains few studies that have investigated the characteristics of tourists undertaking a geotourism experience. This study has profiled the main characteristics of these tourists: age, gender and education level. Thus, further research should be undertaken to test the findings of this study. These studies would use different demographic factors and different geosites to examine the characteristics of tourists undertaking a geotourism experience. Moreover, further research comparing geotourism participants and other types of tourists would be of great help in understanding the distinctive features of geotourists.

6. Although the current study explored the level of satisfaction for the tourists' three psychological basic needs, autonomy, competence and relatedness, the potential relationship between the tourists' psychological needs satisfaction and their behavioural intention to repeat visitation to a geosite was not measured; there is a need for further research to test this relationship.

7. The chosen sample was restricted to the tourists who were aged 18 and above due to ethical requirements, such as parental consent and approval for seeking the data from children. Future research could concentrate on the investigating the motivation of children undertaking a geotourism experience. Cullingford (1995) indicated that investigating children as tourists is an undeveloped and forgotten area of study, despite children being a significant segment of the tourism market. According to Nickerson and Jurowski (2001),

very few studies have explored the children's preferences for tourism and most of the tourism studies of family vacations concentrate on the role of parents in the vacation decision making and neglect the role of their children. Larsen & Jenssen (2004) argue that there is no research on the motivation for school trips in the tourism literature, even though such tours are purposeful. In any event, children are an important component of the geotourism market segment. Joyce (2006) recognized that school students are one part of the geotourist group; and Hose (2008) included children in the educational category of geotourists.

6.4 Limitations of the research

A number of caveats need to be made about the present study. Its most important limitation lies in the use of a convenience sample in this study due to time, resources and cost constraints; these have affected the generalisability of the research findings. Although the researcher used some techniques to enhance the representativeness of the convenience sample to the whole population, the findings cannot be generalized to other populations. According to Gravetter and Forzano (cited in Oppermann, 1998), the researcher has minimal control over the representativeness of the sample and there is high potential to have a biased sample.

The study's second limitation concerns the range of motivational items of the participants' geotourism experience. This study used the common motivation items frequently used in the tourism literature. There is a broad scope of intrinsic motivations in the tourism literature and some of these motivations only were used in a specific tourism destination or a specific type of tourism. Using these items of intrinsic motivation, extrinsic motivation and amotivation as independent variables to investigate the relationship with a dependent variable could be a limitation because other motivation items, which were not applied in the current study, may have affected the behavioural intention of the tourists to revisit a geosite. According to Huang (2010, p. 155), "the validity of this quantitative approach relies largely on the selection of motivation items for the questionnaire. Researchers can do little about those motivation factors that genuinely exist in a tourist's mind but are not listed in the questionnaire". Moreover, the use of predetermined motivation items is problematic

because the researcher cannot ensure that these items encompass the most important motives of the respondents (Jewell & Crotts, 2001).

Thirdly, the scope of tourists' locations was restricted to Crystal Cave and the Pinnacles in Australia, and Wadi Rum and the Dead Sea in Jordan due to the high cost of travelling and accommodation. Furthermore, the selected geosites did not include a geopark. Thus, the study areas did not include all types of geosites.

Fourthly, the questionnaire in this study was written in the English language. A high proportion of the respondents in the four sites in Jordan and Australia were international tourists who are not native English speakers. Therefore, the questionnaire was administered to the respondents who can use the English language; this was a restraint in Wadi Rum and the Dead Sea in Jordan particularly.

Fifthly, the literature shows there had been clear lack of prior research studies on geotourism and the motivation of tourists undertaking the geotourism experience. The main limitation of this serious lack of previous studies was that the findings of the current study could not be compared to and validated by the findings from other studies.

Sixthly, a possible weakness in this study, which could have affected the measurements, was the reliance on self-reported data. For one thing, self-reported data is prone to memory failure of the respondents. In addition, there may be a skewing of the respondents' responses so as to present their behaviour in a favourable manner. Thus, the respondents' distortions and bias can influence the validity of the study (Crockett, Schulenberg, & Petersen, 1987).

6.5 Summary

In recent decades, the scope of geotourism has increased worldwide. Different stakeholders, such as governments, NGOs, geological organizations and local community groups wish to enhance conservation and sustain the geological heritage of such groups (Newsome & Dowling, 2010). The geopark innovation has played a vital role in developing geotourism because it has enhanced socio-economic activities and sustainable tourism development by increasing the flow of the tourists to geological sites (Farsani, Coelho, & Costa, 2010).

Geotourism's share of the tourism market has grown rapidly, especially from the growth in the number of geoparks, for example, the total number of geoparks in the world increased to 87 geoparks in 27 member states by 2011 (GGN, 2011).

Despite the development of geotourism, very few studies have investigated issues pertaining to it. Joyce (2006) stressed that geotourism is a new concept and most dictionaries do not offer the meaning of this construct. Therefore, strength was added to the main purposes of this study, which were to investigate the intrinsic and extrinsic motivations, and the amotivation of tourists undertaking a geotourism experience, and to explore the potential relationship between these motivations and the tourists' behavioural intentions to repeat their visit to a geosite. The current findings add substantially to our understanding of why people travel to geological tourism sites. Drawing on SDT, the methods used for this study at the four geosites, Crystal Cave, The Pinnacles, Wadi Rum and the Dead Sea, may be applied to other geosites elsewhere in the world.

This study may be the first doctoral thesis dedicated to the study of geotourism (tourism with a geological purpose). While work was underway (2009-2011) on this study, several notable developments occurred within geotourism in the world:

1. Increased number of geoparks from 63 in 2009 to 87 in 2011.
2. Introduction of a generally accepted definition of geotourism in 2010 by Newsome and Dowling (2010), Newsome, Dowling & Leung (in press).
3. Holding of two important global geotourism events: the second Global Geotourism Conference, Malaysia in 2010 and the Third Global Geotourism Conference in the Sultanate of Oman in 2011.

Geotourism has great potential as indicated by the rise of the awareness and attention to geological heritage attractions (Newsome & Dowling, 2010). It can enhance our geological heritage, which represents the collective memory of Mother Nature: "The Earth retains memories of the past inscribed both in its depths and on its surface, in the rocks and in the landscape, a record which can be read and translated" (Declaration of the Rights of the Memory of the Earth, 1991).

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APPENDICES

Appendix A: Questionnaire of the pilot study

A.1 Letter of information

Questionnaire



Dear respondents,

You are invited to participate in a PhD research entitled “*Toward better understanding motivations for geotourism experience: Self-Determination Theory perspective*”. This survey is contributing to a PhD research project at Edith Cowan University (ECU), Western Australia.

The main objectives of this study are to investigate the motivations behind tourists undertaking a geotourism experience and to explore why people prefer to visit specific geosites.

The study will contribute to the overall understanding of motivations of the tourists in geotourism contexts. Moreover, it will provide considerable information about needs, wants and requirements of the tourists.

This is an anonymous questionnaire. Please read the information letter carefully as it explains fully the intention of the research project. Please also ensure that you do not write your name (or any other comments that could identify you) on the questionnaire. By completing the questionnaire, you are consenting to take part in this research

If you require any further information or clarification, please do not hesitate to contact the main supervisor, Professor Ross Dowling (r.dowling@ecu.edu.au), the co-supervisor Dr.Dale Sanders (d.sanders@ecu.edu.au) or the researcher Mamoon Allan (mamoona@our.ecu.edu).

If you have any concerns or complaints about the research project and wish to talk to an independent person, you may contact:

Research Ethics Officer

Edith Cowan University

270 Joondalup Drive

JOONDALUP WA 6027

Phone: (08) 6304 2170

Email: research.ethics@ecu.edu.au

Your contribution in completing this questionnaire is appreciated.

Yours sincerely, Mamoon Allan

A.2 Questionnaire of the pilot study in Crystal Cave

Part One: General Information

Please circle the appropriate answer:

1. Gender:

- A) Male B) Female

2. Age:

- A) 18-34 B) 35-39 C) 40-49 D) 50-59 E) 60 years or more

3. Educational Level:

- A) Primary B) Secondary/ high school C) Undergraduate D) Post-graduate

4. My nationality (ies) is (are) _____

Part Two: Source of Information

1. Did you source any information about Crystal Cave before visiting the site?

- A) Yes B) No

2. If yes, what source of information did you use before travelling to the Cave?

Please tick one of the following sources:

Internet	
Brochures	
Guide books information	
Local tourist offices	
Magazines	
Newspapers	
Travel agents	
Friends or relatives	
Personal experience	

Part Three: Tourist Motivation

The following statements describe different types of motivation behind travelling to a site with geological features. Using the scale below, please circle the level of agreement with each of the reasons listed below for which you travel to Crystal Cave:

Strongly disagree					Strongly agree
1	2	3	4	5	

Why did you travel to the Crystal Cave today?

1. To learn new things	1	2	3	4	5
2. To relax and rest	1	2	3	4	5
3. To escape from the daily life routine	1	2	3	4	5
4. To increase my knowledge	1	2	3	4	5
5. It is exciting	1	2	3	4	5
6. Because it has many social, cultural and recreational advantages for me	1	2	3	4	5
7. To meet people with similar interests and hobbies	1	2	3	4	5
8. Not by choice; I don't care about this type of tourism activity	1	2	3	4	5
9. In my life I need this type of tourism activity to be happy	1	2	3	4	5
10. To have fun	1	2	3	4	5
11. Because I believe it is personally important to me to travel to the site	1	2	3	4	5
12. I must be occupied with activities	1	2	3	4	5
13. To show others that I am a distinctive person	1	2	3	4	5
14. To travel with friends and my family	1	2	3	4	5
15. I don't really know; I don't think that this type of tourism suits me	1	2	3	4	5
16. Because it is an exotic place	1	2	3	4	5
17. To refresh my mental and physical state	1	2	3	4	5
18. Honestly, I don't know; I feel that I wasted my time in this type of tourism activity	1	2	3	4	5
19. Because my family and friends tell me to do this activity	1	2	3	4	5
20. To explore new places	1	2	3	4	5

Part Four: Tourist Satisfaction

The following statements describe the basic psychological needs satisfaction. For each of the following statements, please indicate how true the statement is for you, using the following scale:

Not true					True				
1	2	3	4	5	1	2	3	4	5

During my experience in Crystal Cave I felt...:

1. That people at this place were friendly towards me	1	2	3	4	5
2. That I like the people I am travelling with	1	2	3	4	5
3. That my choice of visiting this geosite is based on my true interests and values	1	2	3	4	5
4. That people I know tell me I am good at choosing tourist sites	1	2	3	4	5
5. That most times I feel a sense of accomplishment from what I do	1	2	3	4	5
6. A strong sense of intimacy with the people I spent time with	1	2	3	4	5
7. Pressured at this place	1	2	3	4	5
8. That I have been able to learn interesting new skills	1	2	3	4	5
9. That the people I travel with do not seem to like me much	1	2	3	4	5
10. That there is not much opportunity for me to decide for myself where I want to visit	1	2	3	4	5

Part Five: Repeat visitation to Crystal Cave

The following statements describe your attitude to revisit Crystal Cave in the future. Please indicate the likelihood that you would make the following statement following your visit to Crystal Cave:

Extremely unlikely					Extremely likely
1	2	3	4	5	

How likely would you repeat your visitation to Crystal Cave?

1. Crystal Cave would be my first choice for my next holiday	1	2	3	4	5
2. I would not visit Crystal Cave again in the next few years	1	2	3	4	5
3. I would complain to Crystal Cave staff if I experienced any problem with the services	1	2	3	4	5
4. I would continue to visit Crystal Cave even if the price of its services increased somewhat	1	2	3	4	5
5. I would switch to another place as I experienced a problem with the services at Crystal Cave	1	2	3	4	5
6. I would recommend Crystal Cave to someone else	1	2	3	4	5
7. I would say positive things about my experience in Crystal Cave	1	2	3	4	5
8. I would go to another tourism site that offers cheaper prices	1	2	3	4	5
9. I would complain to other tourists if I experienced a problems with Crystal Cave services	1	2	3	4	5
10. I would encourage my family members, peers and friends to visit the Caves	1	2	3	4	5
11. I would complain to external tourism authorities if I experienced problems with Crystal Cave services	1	2	3	4	5
12. I will visit another site that offers a different type of tourism experience	1	2	3	4	5
13. I will visit Crystal Cave again in the next few years	1	2	3	4	5

Many thanks for your contribution

Appendix B: questionnaire of the study in Wadi Rum in Jordan

Part One: General Information

Please circle the appropriate answer:

2. Gender:

B) Male B) Female

2. Age:

A) 18-34 B) 35-39 C) 40-49 D) 50-59 E) 60 years or more

3. Educational Level:

B) Primary B) Secondary/ high school C) Undergraduate D) Post-graduate

4. My nationality is _____

Part Two: Source of Information

1. Did you source any information about Wadi Rum before visiting the site?

A) Yes B) No

2. If yes, what source of information did you use before travelling to Wadi Rum?

Please tick one of the following sources:

Internet	
Brochures	
Guide books information	
Local tourist offices	
Magazines	
Newspapers	
Travel agents	
Friends or relatives	
Personal experience	

Part Three: Tourist Motivation

The following statements describe different types of motivation behind travelling to a site with geological features. Using the scale below, please circle the level of agreement with each of the reasons listed below for which you travel to Wadi Rum:

Strongly disagree					Strongly agree
1	2	3	4	5	

Why did you travel to the Wadi Rum today?

1. To learn new things	1	2	3	4	5
2. To relax and rest	1	2	3	4	5
3. To escape from the daily life routine	1	2	3	4	5
4. To increase my knowledge	1	2	3	4	5
5. It is exciting	1	2	3	4	5
6. Because it has many social, cultural and recreational advantages for me	1	2	3	4	5
7. To meet people with similar interests and hobbies	1	2	3	4	5
8. Not by choice; I don't care about this type of tourism activity	1	2	3	4	5
9. In my life I need this type of tourism activity to be happy	1	2	3	4	5
10. To have fun	1	2	3	4	5
11. Because I believe it is personally important to me to travel to the site	1	2	3	4	5
12. I must be occupied with activities	1	2	3	4	5
13. To show others that I am a distinctive person	1	2	3	4	5
14. To travel with friends and my family	1	2	3	4	5
15. I don't really know; I don't think that this type of tourism suits me	1	2	3	4	5
16. Because it is an exotic place	1	2	3	4	5
17. To refresh my mental and physical state	1	2	3	4	5
18. Honestly, I don't know; I feel that I wasted my time in this type of tourism activity	1	2	3	4	5
19. Because my family and friends tell me to do this activity	1	2	3	4	5
20. To explore new places	1	2	3	4	5

Part Four: Tourist Satisfaction

The following statements describe the basic psychological needs satisfaction. For each of the following statements, please indicate how true the statement is for you, using the following scale:

Not true							True
1	2		3		4		5

During my experience in Wadi Rum I felt....:

1. That people at this place were friendly towards me	1	2	3	4	5
2. That I like the people I am travelling with	1	2	3	4	5
3. That my choice of visiting this geosite is based on my true interests and values	1	2	3	4	5
4. That people I know tell me I am good at choosing tourist sites	1	2	3	4	5
5. That most times I feel a sense of accomplishment from what I do	1	2	3	4	5
6. A strong sense of intimacy with the people I spent time with	1	2	3	4	5
7. Pressured at this place	1	2	3	4	5
8. That I have been able to learn interesting new skills	1	2	3	4	5
9. That the people I travel with do not seem to like me much	1	2	3	4	5
10. That there is not much opportunity for me to decide for myself where I want to visit	1	2	3	4	5

Part Five: Repeat visitation to Wadi Rum

The following statements describe your attitude to revisit Wadi Rum in the future. Please indicate the likelihood that you would make the following statement following your visit to Wadi Rum:

Extremely unlikely					Extremely likely
1	2	3	4	5	

How likely would you repeat your visitation to Wadi Rum?

1. Wadi Rum would be my first choice for my next holiday	1	2	3	4	5
2. I would not visit Wadi Rum again in the next few years	1	2	3	4	5
3. I would complain to Wadi Rum staff if I experienced any problem with the services	1	2	3	4	5
4. I would continue to visit Wadi Rum even if the price of its services increased somewhat	1	2	3	4	5
5. I would switch to another place as I experienced a problem with the services at Wadi Rum	1	2	3	4	5
6. I would recommend Wadi Rum to someone else	1	2	3	4	5
7. I would say positive things about my experience in Wadi Rum	1	2	3	4	5
8. I would go to another tourism site that offers cheaper prices	1	2	3	4	5
9. I would complain to other tourists if I experienced a problems with Wadi Rum services	1	2	3	4	5
10. I would encourage my family members, peers and friends to visit the Caves	1	2	3	4	5
11. I would complain to external tourism authorities if I experienced problems with Wadi Rum services	1	2	3	4	5
12. I will visit another site that offers a different type of tourism experience	1	2	3	4	5
13. I will visit Wadi Rum again in the next few years	1	2	3	4	5

Many thanks for your contribution

Appendix C: questionnaire of the study in the Dead Sea in Jordan

Part One: General Information

Please circle the appropriate answer:

3. Gender:

C) Male B) Female

2. Age:

A) 18-34 B) 35-39 C) 40-49 D) 50-59 E) 60
years or more

3. Educational Level:

C) Primary B) Secondary/ high school C) Undergraduate D)
Post-graduate

4. My nationality is _____

Part Two: Source of Information

1. Did you source any information about the Dead Sea before visiting the site?

A) Yes B) No

2. If yes, what source of information did you use before travelling to the Dead Sea?

Please tick one of the following sources:

Internet	
Brochures	
Guide books information	
Local tourist offices	
Magazines	
Newspapers	
Travel agents	
Friends or relatives	
Personal experience	

Part Three: Tourist Motivation

The following statements describe different types of motivation behind travelling to a site with geological features. Using the scale below, please circle the level of agreement with each of the reasons listed below for which you travel to the Dead Sea:

Strongly disagree					Strongly agree
1	2	3	4	5	

Why did you travel to the Dead Sea today?

1. To learn new things	1	2	3	4	5
2. To relax and rest	1	2	3	4	5
3. To escape from the daily life routine	1	2	3	4	5
4. To increase my knowledge	1	2	3	4	5
5. It is exciting	1	2	3	4	5
6. Because it has many social, cultural and recreational advantages for me	1	2	3	4	5
7. To meet people with similar interests and hobbies	1	2	3	4	5
8. Not by choice; I don't care about this type of tourism activity	1	2	3	4	5
9. In my life I need this type of tourism activity to be happy	1	2	3	4	5
10. To have fun	1	2	3	4	5
11. Because I believe it is personally important to me to travel to the site	1	2	3	4	5
12. I must be occupied with activities	1	2	3	4	5
13. To show others that I am a distinctive person	1	2	3	4	5
14. To travel with friends and my family	1	2	3	4	5
15. I don't really know; I don't think that this type of tourism suits me	1	2	3	4	5
16. Because it is an exotic place	1	2	3	4	5
17. To refresh my mental and physical state	1	2	3	4	5
18. Honestly, I don't know; I feel that I wasted my time in this type of tourism activity	1	2	3	4	5
19. Because my family and friends tell me to do this activity	1	2	3	4	5
20. To explore new places	1	2	3	4	5

Part Four: Tourist Satisfaction

The following statements describe the basic psychological needs satisfaction. For each of the following statements, please indicate how true the statement is for you, using the following scale:

Not true						True	
1	2		3		4		5

During my experience in The Dead Sea I felt...:

1. That people at this place were friendly towards me	1	2	3	4	5
2. That I like the people I am travelling with	1	2	3	4	5
3. That my choice of visiting this geosite is based on my true interests and values	1	2	3	4	5
4. That people I know tell me I am good at choosing tourist sites	1	2	3	4	5
5. That most times I feel a sense of accomplishment from what I do	1	2	3	4	5
6. A strong sense of intimacy with the people I spent time with	1	2	3	4	5
7. Pressured at this place	1	2	3	4	5
8. That I have been able to learn interesting new skills	1	2	3	4	5
9. That the people I travel with do not seem to like me much	1	2	3	4	5
10. That there is not much opportunity for me to decide for myself where I want to visit	1	2	3	4	5

Part Five: Repeat visitation to The Dead Sea

The following statements describe your attitude to revisit The Dead Sea in the future. Please indicate the likelihood that you would make the following statement following your visit to The Dead Sea:

Extremely unlikely					Extremely likely
1	2	3	4	5	

How likely would you repeat your visitation to The Dead Sea?

1. The Dead Sea would be my first choice for my next holiday	1	2	3	4	5
2. I would not visit the Dead Sea again in the next few years	1	2	3	4	5
3. I would complain to the Dead Sea staff if I experienced any problem with the services	1	2	3	4	5
4. I would continue to visit the Dead Sea even if the price of its services increased somewhat	1	2	3	4	5
5. I would switch to another place as I experienced a problem with the services at the Dead Sea	1	2	3	4	5
6. I would recommend the Dead Sea to someone else	1	2	3	4	5
7. I would say positive things about my experience in the Dead Sea	1	2	3	4	5
8. I would go to another tourism site that offers cheaper prices	1	2	3	4	5
9. I would complain to other tourists if I experienced a problems with the Dead Sea services	1	2	3	4	5
10. I would encourage my family members, peers and friends to visit the Dead Sea	1	2	3	4	5
11. I would complain to external tourism authorities if I experienced problems with the Dead Sea services	1	2	3	4	5
12. I will visit another site that offers a different type of tourism experience	1	2	3	4	5
13. I will visit the Dead Sea again in the next few years	1	2	3	4	5

Many thanks for your contribution

Appendix D: questionnaire of the study in Crystal Cave in Australia

Part One: General Information

Please circle the appropriate answer:

4. Gender:

D) Male B) Female

2. Age:

A) 18-34 B) 35-39 C) 40-49 D) 50-59 E) 60
years or more

3. Educational Level:

D) Primary B) Secondary/ high school C) Undergraduate D)
Post-graduate

4. My nationality is _____

Part Two: Source of Information

1. Did you source any information about Crystal Cave before visiting the site?

A) Yes B) No

2. If yes, what source of information did you use before travelling to the Crystal Cave?

Please tick one of the following sources:

Internet	
Brochures	
Guide books information	
Local tourist offices	
Magazines	
Newspapers	
Travel agents	
Friends or relatives	
Personal experience	

Part Three: Tourist Motivation

The following statements describe different types of motivation behind travelling to a site with geological features. Using the scale below, please circle the level of agreement with each of the reasons listed below for which you travel to Crystal Cave:

Strongly disagree					Strongly agree
1	2	3	4	5	

Why did you travel to Crystal Cave today?

1. To learn new things	1	2	3	4	5
2. To relax and rest	1	2	3	4	5
3. To escape from the daily life routine	1	2	3	4	5
4. To increase my knowledge	1	2	3	4	5
5. It is exciting	1	2	3	4	5
6. Because it has many social, cultural and recreational advantages for me	1	2	3	4	5
7. To meet people with similar interests and hobbies	1	2	3	4	5
8. Not by choice; I don't care about this type of tourism activity	1	2	3	4	5
9. In my life I need this type of tourism activity to be happy	1	2	3	4	5
10. To have fun	1	2	3	4	5
11. Because I believe it is personally important to me to travel to the site	1	2	3	4	5
12. I must be occupied with activities	1	2	3	4	5
13. To show others that I am a distinctive person	1	2	3	4	5
14. To travel with friends and my family	1	2	3	4	5
15. I don't really know; I don't think that this type of tourism suits me	1	2	3	4	5
16. Because it is an exotic place	1	2	3	4	5
17. To refresh my mental and physical state	1	2	3	4	5
18. Honestly, I don't know; I feel that I wasted my time in this type of tourism activity	1	2	3	4	5
19. Because my family and friends tell me to do this activity	1	2	3	4	5
20. To explore new places	1	2	3	4	5

Part Four: Tourist Satisfaction

The following statements describe the basic psychological needs satisfaction. For each of the following statements, please indicate how true the statement is for you, using the following scale:

Not true				True	
1	2	3	4	5	

During my experience in Crystal Cave, I felt...:

1. That people at this place were friendly towards me	1	2	3	4	5
2. That I like the people I am travelling with	1	2	3	4	5
3. That my choice of visiting this geosite is based on my true interests and values	1	2	3	4	5
4. That people I know tell me I am good at choosing tourist sites	1	2	3	4	5
5. That most times I feel a sense of accomplishment from what I do	1	2	3	4	5
6. A strong sense of intimacy with the people I spent time with	1	2	3	4	5
7. Pressured at this place	1	2	3	4	5
8. That I have been able to learn interesting new skills	1	2	3	4	5
9. That the people I travel with do not seem to like me much	1	2	3	4	5
10. That there is not much opportunity for me to decide for myself where I want to visit	1	2	3	4	5

Part Five: Repeat visitation to Crystal Cave

The following statements describe your attitude to revisit Crystal Cave in the future. Please indicate the likelihood that you would make the following statement following your visit to Crystal Cave :

Extremely unlikely					Extremely likely
1	2	3	4	5	

How likely would you repeat your visitation to Crystal Cave?

1. Crystal Cave would be my first choice for my next holiday	1	2	3	4	5
2. I would not visit Crystal Cave again in the next few years	1	2	3	4	5
3. I would complain to Crystal Cave staff if I experienced any problem with the services	1	2	3	4	5
4. I would continue to visit Crystal Cave even if the price of its services increased somewhat	1	2	3	4	5
5. I would switch to another place as I experienced a problem with the services at Crystal Cave	1	2	3	4	5
6. I would recommend Crystal Cave to someone else	1	2	3	4	5
7. I would say positive things about my experience in Crystal Cave	1	2	3	4	5
8. I would go to another tourism site that offers cheaper prices	1	2	3	4	5
9. I would complain to other tourists if I experienced a problems with Crystal Cave services	1	2	3	4	5
10. I would encourage my family members, peers and friends to visit Crystal Cave	1	2	3	4	5
11. I would complain to external tourism authorities if I experienced problems with Crystal Cave services	1	2	3	4	5
12. I will visit another site that offers a different type of tourism experience	1	2	3	4	5
13. I will visit Crystal Cave again in the next few years	1	2	3	4	5

Many thanks for your contribution

Appendix E: questionnaire of the study in The Pinnacles in Australia

Part One: General Information

Please circle the appropriate answer:

5. Gender:

E) Male B) Female

2. Age:

A) 18-34 B) 35-39 C) 40-49 D) 50-59 E) 60
years or more

3. Educational Level:

E) Primary B) Secondary/ high school C) Undergraduate D)
Post-graduate

4. My nationality is _____

Part Two: Source of Information

1. Did you source any information about The Pinnacles before visiting the site?

A) Yes B) No

2. If yes, what source of information did you use before travelling to the Pinnacles?

Please tick one of the following sources:

Internet	
Brochures	
Guide books information	
Local tourist offices	
Magazines	
Newspapers	
Travel agents	
Friends or relatives	
Personal experience	

Part Three: Tourist Motivation

The following statements describe different types of motivation behind travelling to a site with geological features. Using the scale below, please circle the level of agreement with each of the reasons listed below for which you travel to the Dead Sea:

Strongly disagree					Strongly agree
1	2	3	4	5	

Why did you travel to The Pinnacles today?

1. To learn new things	1	2	3	4	5
2. To relax and rest	1	2	3	4	5
3. To escape from the daily life routine	1	2	3	4	5
4. To increase my knowledge	1	2	3	4	5
5. It is exciting	1	2	3	4	5
6. Because it has many social, cultural and recreational advantages for me	1	2	3	4	5
7. To meet people with similar interests and hobbies	1	2	3	4	5
8. Not by choice; I don't care about this type of tourism activity	1	2	3	4	5
9. In my life I need this type of tourism activity to be happy	1	2	3	4	5
10. To have fun	1	2	3	4	5
11. Because I believe it is personally important to me to travel to the site	1	2	3	4	5
12. I must be occupied with activities	1	2	3	4	5
13. To show others that I am a distinctive person	1	2	3	4	5
14. To travel with friends and my family	1	2	3	4	5
15. I don't really know; I don't think that this type of tourism suits me	1	2	3	4	5
16. Because it is an exotic place	1	2	3	4	5
17. To refresh my mental and physical state	1	2	3	4	5
18. Honestly, I don't know; I feel that I wasted my time in this type of tourism activity	1	2	3	4	5
19. Because my family and friends tell me to do this activity	1	2	3	4	5
20. To explore new places	1	2	3	4	5

Part Four: Tourist Satisfaction

The following statements describe the basic psychological needs satisfaction. For each of the following statements, please indicate how true the statement is for you, using the following scale:

Not true				True	
1	2	3	4	5	

During my experience in The Pinnacles, I felt...:

1. That people at this place were friendly towards me	1	2	3	4	5
2. That I like the people I am travelling with	1	2	3	4	5
3. That my choice of visiting this geosite is based on my true interests and values	1	2	3	4	5
4. That people I know tell me I am good at choosing tourist sites	1	2	3	4	5
5. That most times I feel a sense of accomplishment from what I do	1	2	3	4	5
6. A strong sense of intimacy with the people I spent time with	1	2	3	4	5
7. Pressured at this place	1	2	3	4	5
8. That I have been able to learn interesting new skills	1	2	3	4	5
9. That the people I travel with do not seem to like me much	1	2	3	4	5
10. That there is not much opportunity for me to decide for myself where I want to visit	1	2	3	4	5

Part Five: Repeat visitation to The Pinnacles

The following statements describe your attitude to revisit The Pinnacles in the future. Please indicate the likelihood that you would make the following statement following your visit to The Pinnacles:

Extremely unlikely					Extremely likely
1	2	3	4	5	

How likely would you repeat your visitation to The Pinnacles?

1. Crystal Cave would be my first choice for my next holiday	1	2	3	4	5
2. I would not visit The Pinnacles again in the next few years	1	2	3	4	5
3. I would complain to The Pinnacles staff if I experienced any problem with the services	1	2	3	4	5
4. I would continue to visit The Pinnacles even if the price of its services increased somewhat	1	2	3	4	5
5. I would switch to another place as I experienced a problem with the services at The Pinnacles	1	2	3	4	5
6. I would recommend The Pinnacles to someone else	1	2	3	4	5
7. I would say positive things about my experience in The Pinnacles	1	2	3	4	5
8. I would go to another tourism site that offers cheaper prices	1	2	3	4	5
9. I would complain to other tourists if I experienced a problems with The Pinnacles services	1	2	3	4	5
10. I would encourage my family members, peers and friends to visit The Pinnacles	1	2	3	4	5
11. I would complain to external tourism authorities if I experienced problems with The Pinnacles services	1	2	3	4	5
12. I will visit another site that offers a different type of tourism experience	1	2	3	4	5
13. I will visit The Pinnacles again in the next few years	1	2	3	4	5

Many thanks for your contribution

Appendix F: Leisure Motivation Scale (LMS-28)

Scale Description

This scale assesses people's motivation for engaging in their leisure activities. It assesses 7 types of motivation : intrinsic motivation toward knowledge, accomplishment and stimulation, as well as external, introjected and identified regulations and amotivation. It contains 28 items (4 items for each of the 7 sub-scales) assessed on a 7-point scale.

References

Pelletier, L.G., Vallerand, R.J., Brière, N.M., & Blais, . Construction et validation de l'Échelle de motivation vis-à-vis les Loisirs (EML).
Communication présentée au congrès annuel de la SQRP, Ottawa, ON,
28 octobre 1989. Résumé des communications, p.146.

LEISURE MOTIVATION SCALE (LMS-28)

Luc G. Pelletier, Robert J. Vallerand, Marc R. Blais & Nathalie M. Brière, 1991

ATTITUDE IN LEISURE

Indicate the leisure activities that you do most often, and to which you will refer throughout the questionnaire (e.g., reading, going out):

Using the scale below, indicate to what extent each of the following items presently corresponds to one of the reasons for which you practice this leisure.

Does not						
correspond	Corresponds		Corresponds	Corresponds		Corresponds
at all	a little		moderately	a lot		exactly
1	2	3	4	5	6	7

WHY DO YOU GENERALLY DO YOUR LEISURE ACTIVITIES?

1. To avoid doing other tasks.

1 2 3 4 5 6 7
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2. Because I experience a lot of pleasure and satisfaction in learning new things.

1 2 3 4 5 6 7

3. Because in my opinion, it is a good way to develop social, physical or intellectual abilities that will be useful to me later.

1 2 3 4 5 6 7

4. For the pleasure I feel in living exciting experiences.

1 2 3 4 5 6 7

5. I can't come to see why I do leisure activities, and frankly I don't really care.

1 2 3 4 5 6 7

6. For the satisfaction I feel when I try to overcome interesting challenges.

1 2 3 4 5 6 7

7. Because it is very important for me to fill my free time.

1 2 3 4 5 6 7

8. Because I don't like to appear as someone who does nothing

1 2 3 4 5 6 7

9. For the pleasure of knowing more about subjects that appeal me.

1 2 3 4 5 6 7

10. Because it's one of the ways that I have chosen to make improvements on a personal level.

1 2 3 4 5 6 7

11. for the sense of freedom that I experience while doing the activity.

1 2 3 4 5 6 7

12. I don't really know; I don't think that leisure activities suit me.

1 2 3 4 5 6 7

13. For the pleasure I feel when I outdo myself in interesting activities.

1 2 3 4 5 6 7

14. Because in life you absolutely need leisure activities to be happy.

1 2 3 4 5 6 7

15. Because sometimes it allows me to be appreciated by others.

1 2 3 4 5 6 7

16. Because it allows me to deepen my understanding of subjects that interest me.

1 2 3 4 5 6 7

17. Because it's the way I've chosen to acquire abilities in other areas that are important to me.

1 2 3 4 5 6 7

18. Because my leisure activities give me a real "high".

1 2 3 4 5 6 7

19. I don't really know; I have the impression that there isn't any activity that I could do very well.

1 2 3 4 5 6 7

20. For the pleasure of surpassing myself while doing activities that are challenging for me.

1 2 3 4 5 6 7

21. Because I absolutely must feel busy.

1 2 3 4 5 6 7

22. To show others that I am a dynamic person.

1 2 3 4 5 6 7

23. Because it allows me to explore many interesting domains.

1 2 3 4 5 6 7

24. Because doing leisure activities is one of the ways that allows me to develop other aspects of myself.

1 2 3 4 5 6 7

25. For the simple of pleasure of feeling deeply relaxed.

1 2 3 4 5 6 7

26. Honestly, I don't know; I have the impression that I'm wasting my time when I do leisure activities.

1 2 3 4 5 6 7

27. For the satisfaction I get while trying to master complex activities.

1 2 3 4 5 6 7

28. Because I absolutely must have my leisure time to be in a good mood.

1 2 3 4 5 6 7

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KEY FOR LMS-28

2, 9, 16, 23 Intrinsic motivation - to know

6, 13, 20, 27 Intrinsic motivation - to accomplish

4, 11, 18, 25 Intrinsic motivation - to experience stimulation

3, 10, 17, 24 Extrinsic motivation - identified

7, 14, 21, 28 Extrinsic motivation - introjected

1, 8, 15, 22, Extrinsic motivation - external regulation

5, 12, 19, 26 Amotivation

Appendix G: Basic Psychological Needs Scales (University of Rochester, 2008)

Basic Psychological Needs Scales

The Scales

Basic Need Satisfaction in General

Feelings I Have

Please read each of the following items carefully, thinking about how it relates to your life, and then indicate how true it is for you. Use the following scale to respond:

1	2	3	4	5	6	7
not at all			somewhat			very
true			true			true

1. I feel like I am free to decide for myself how to live my life.
2. I really like the people I interact with.
3. Often, I do not feel very competent.
4. I feel pressured in my life.
5. People I know tell me I am good at what I do.
6. I get along with people I come into contact with.

7. I pretty much keep to myself and don't have a lot of social contacts.
8. I generally feel free to express my ideas and opinions.
9. I consider the people I regularly interact with to be my friends.
10. I have been able to learn interesting new skills recently.
11. In my daily life, I frequently have to do what I am told.
12. People in my life care about me.
13. Most days I feel a sense of accomplishment from what I do.
14. People I interact with on a daily basis tend to take my feelings into consideration.
15. In my life I do not get much of a chance to show how capable I am.
16. There are not many people that I am close to.
17. I feel like I can pretty much be myself in my daily situations.
18. The people I interact with regularly do not seem to like me much.
19. I often do not feel very capable.
20. There is not much opportunity for me to decide for myself how to do things in my daily life.
21. People are generally pretty friendly towards me.

Scoring information. Form three subscale scores, one for the degree to which the person experiences satisfaction of each of the three needs. To do that, you must first reverse score all items that are worded in a negative way (i.e., the items shown below with (R) following the items number). To reverse score an item, simply subtract the item response from 8. Thus, for example, a 2 would be converted to a 6. Once you have reverse scored the items, simply average the items on the relevant subscale. They are:

Autonomy: 1, 4(R), 8, 11(R), 14, 17, 20(R)

Competence: 3(R), 5, 10, 13, 15(R), 19(R)

Relatedness: 2, 6, 7(R), 9, 12, 16(R), 18(R), 21

Basic Need Satisfaction at Work

When I Am At Work

The following questions concern your feelings about your job during the last year. (If you have been on this job for less than a year, this concerns the entire time you have been at this job.) Please indicate how true each of the following statement is for you given your experiences on this job. Remember that your boss will never know how you responded to the questions. Please use the following scale in responding to the items.

1	2	3	4	5	6	7
not at all			somewhat			very
true			true			true

1. I feel like I can make a lot of inputs to deciding how my job gets done.
2. I really like the people I work with.
3. I do not feel very competent when I am at work.
4. People at work tell me I am good at what I do.
5. I feel pressured at work.

6. I get along with people at work.
7. I pretty much keep to myself when I am at work.
8. I am free to express my ideas and opinions on the job.
9. I consider the people I work with to be my friends.
10. I have been able to learn interesting new skills on my job.
11. When I am at work, I have to do what I am told.
12. Most days I feel a sense of accomplishment from working.
13. My feelings are taken into consideration at work.
14. On my job I do not get much of a chance to show how capable I am.
15. People at work care about me.
16. There are not many people at work that I am close to.
17. I feel like I can pretty much be myself at work.
18. The people I work with do not seem to like me much.
19. When I am working I often do not feel very capable.
20. There is not much opportunity for me to decide for myself how to go about my work.

21. People at work are pretty friendly towards me.

Scoring Information. Form three subscale scores by averaging item responses for each subscale after reverse scoring the items that were worded in the negative direction. Specifically, any item that has (R) after it in the code below should be reverse scored by subtracting the person's response from 8. The subscales are:

Autonomy: 1, 5(R), 8, 11(R), 13, 17, 20(R)

Competence: 3(R), 4, 10, 12, 14(R), 19(R)

Relatedness: 2, 6, 7(R), 9, 15, 16(R), 18(R), 21

Basic Need Satisfaction in Relationships

Note: This questionnaire was designed for use with respect to need satisfaction in particular relationships. For example, it is to assess the degree to which a person experiences basic need satisfaction while relating to his or her spouse, or best friend, or mother, or children, or whomever. So, to use the questionnaire to assess need satisfaction in a relationship, replace the XXXXXXXX with the relationship you are studying. Although we have never done so, you could try using it for relationships in general if that is the question that interests you.

In My Relationships

Please respond to each statement by indicating how true it is for you. Use the following scale.

1	2	3	4	5	6	7
not at all			somewhat			very
true			true			true

1. When I am with XXXXXXXX, I feel free to be who I am.
2. When I am with XXXXXXXX, I feel like a competent person.
3. When I am with XXXXXXXX, I feel loved and cared about.

4. When I am with XXXXXXXX, I often feel inadequate or incompetent.
5. When I am with XXXXXXXX, I have a say in what happens, and I can voice my opinion.
6. When I am with XXXXXXXX, I often feel a lot of distance in our relationship.
7. When I am with XXXXXXXX, I feel very capable and effective.
8. When I am with XXXXXXXX, I feel a lot of closeness and intimacy.
9. When I am with XXXXXXXX, I feel controlled and pressured to be certain ways.

Scoring Information. Form three subscale scores by averaging item responses for each subscale after reverse scoring the items that were worded in the negative direction. Specifically, any item that has (R) after it in the code below should be reverse scored by subtracting the person's response from 8. The subscales are:

Autonomy: 1, 5, 9(R)

Competence: 2, 4(R), 7

Relatedness: 3, 6(R), 8

La Guardia, J. G., Ryan, R. M., Couchman, C. E., & Deci, E. L. (2000). Within-person variation in security of attachment: A Self-Determination Theory perspective on attachment, need fulfillment, and well-being. *Journal of Personality and Social Psychology*, 79, 367-384.

Appendix H: Behavioural Intention Battery (Zeithaml, Leonard and Parasauraman, 1996)

Behavioral-Intentions Battery ^a		
Behavioral-Intentions Dimension	Item Label	Item Wording
Loyalty	I1	Say positive things about XYZ to other people.
	I2	Recommend XYZ to someone who seeks your advice.
	I3	Encourage friends and relatives to do business with XYZ.
	I4	Consider XYZ your first choice to buy ——— services.
	I5	Do more business with XYZ in the next few years.
Switch	I6	Do less business with XYZ in the next few years (-).
Pay More	I7	Take some of your business to a competitor that offers better prices (-).
	I8	Continue to do business with XYZ if its prices increase somewhat.
External Response	I9	Pay a higher price than competitors charge for the benefits you currently receive from XYZ.
	I10	Switch to a competitor if you experience a problem with XYZ's service.
	I11	Complain to other customers if you experience a problem with XYZ's service.
Internal Response	I12	Complain to external agencies, such as the Better Business Bureau, if you experience a problem with XYZ's service.
	I13	Complain to XYZ's employees if you experience a problem with XYZ's service.

^aThe items were grouped as follows in the a priori categorization of the battery: Word-of-Mouth Communications—I1, I2, I3; Purchase Intentions — I4, I5, I6; Price Sensitivity — I7, I8, I9; Complaining Behavior — I10, I11, I12, I13. Each item was accompanied by a 7-point likelihood scale (1 = not at all likely and 7 = extremely likely). Items identified with a “-” were reverse scored.

Appendix I: Global Geoparks 2011

Countries	Geopark
Australia	Kanawinka Geopark
Austria	Nature Park Eisenwurzen
Brazil	Araripe Geopark
Canada	Stonehammer Geopark
China	Danxiashan Geopark
	Fangshan Geopark
	Funiushan Geopark
	Hexigten Geopark
	Huangshan Geopark
	Jingpohu Geopark
	Leiqiong Geopark
	Longhushan Geopark
	Lushan Geopark
	Taishan Geopark
	Qinling Geopark
	Songshan Geopark
	Stone Forest Geopark (Shilin Geopark)
	Taining Geopark
	Wudalianchi Geopark
	Wangwushan-Daimeishan Geopark
	Xingwen Geopark
	Yandangshan Geopark
	Yuntaishan Geopark
	Zhangjiajie Sandstone Peak Forest Geopark
	Zigong Geopark
	Alxa Desert Geopark
	Leye-Fengshan Geopark
	Ningde Geopark
Croatia	Papuk Geopark
Czech Republic	Bohemian Paradise Geopark

Finland	Rokua Geopark
France	Park Naturel Régional du Luberon
	Reserve Géologique de Haute Provence
Germany	Geopark Bergstrasse - Odenwald
	Geopark Harz Braunschweiger Land Ostfalen
	Geopark Swabian Albs
	Nature park Terra Vita
	Vulkaneifel Geopark
Greece	Chelmos-Vouraikos Geopark
	Petrified Forest of Lesvos
	Psiloritis Natural Park
	Vikos–Aaos Geopark
Hungary-Slovakia	Novohrad-Nograd geopark
Iran	Qeshm Geopark
Republic of Northern Ireland	Marble Arch Caves & Cuilcagh Mountain Park
Ireland	Copper Coast Geopark
Italy	Rocca Di Cerere Geopark
	Adamello Brenta Geopark
	Parco del Beigua
	Madonie Natural Park
	Geological and Mining Park of Sardinia
	Parco Nazionale del Cilento e Vallo di Diano
	Tuscan Mining Park
Japan	Toya Caldera and Usu Volcano Geopark
	Itoigawa Geopark
	Unzen Volcanic Geopark
	San'in Kaigan Geopark
Korea	Jeju Island Geopark
Malaysia	Langkawi Geopark
Norway	Gea-Norvegica Geopark
	Magma Geopark
Portugal	Arouca Geopark
	Naturtejo Geopark
Romania	Hateg Country Dinosaur Geopark

Spain	Cabo de Gata Natural Park
	Maestrazgo Cultural Park
	Sobrarbe Geopark
	Subeticas Geopark
	Basque Coast Geopark
United Kingdom	Shetland Geopark
	Geo Mon Geopark - Wales
	Forest Fawr Geopark – Wales
	North Pennines AONB Geopark
	North West Highlands – Scotland
	Lochaber Geopark – Scotland
	English Riviera Geopark
Vietnam	Dong Van Karst Plateau Geopark