

Establishing a hybrid-methodology model for co-designing
behaviour change: within the context of adventure sport
participation in Scotland



A thesis submitted for the degree of Doctor of Philosophy (PhD)

by

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Declaration

Candidate's declarations:

I, Sarah Morton, hereby certify that this thesis submitted in partial fulfilment of the requirements for the award of Doctor of Philosophy (PhD), Abertay University, is wholly my own work unless otherwise referenced or acknowledged. This work has not been submitted for any other qualification at any other academic institution.

Signed

Date.....29 August 2016

Supervisor's declaration:

I, Professor Gregor White hereby certify that the candidate has fulfilled the conditions of the Resolution and Regulations appropriate for the degree of Doctor of Philosophy (PhD) in Abertay University and that the candidate is qualified to submit this thesis in application for that degree.

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Certificate of Approval

I certify that this is a true and accurate version of the thesis approved by the examiners, and that all relevant ordinance regulations have been fulfilled.

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Abstract

Adventure sport participation numbers have significantly increased over the period of the past ten years; it has been suggested that the emergence of an *experience economy*, where experiences have more value than possessions, could be a key factor for this increase. Motivations for taking part in an adventure sport activity varies between participants, and perhaps even more so than those motivations that were expressed by participants' *pre-experience economy*.

There are a number of theories about increased participant numbers; for example, the type of demographic, how they approach participation, and approximate suggestions of how the trend for experiences rather than possessions will evolve in the future. However, there is little that explores the experiences of these newer participants, how they behave, and how they are being received by the adventure sport industry. Additionally, there is no evidence to suggest a definite understanding of the needs and requirements of these participants, nor has an investigation been conducted to measure how well the industry is meeting these. Likewise, the potential to adapt existing provision, to expose untapped opportunities, appears unconsidered, and therefore may have benefit for both providers and participants.

This study took its lead from using a process of problematization, whereby the problem is explored, identified and defined by the designer(s), rather than presented to them to solve. Using this approach, a hybrid methodologies model was designed and tested to explore the perceptions and experiences of adventure sport participants, to identify any changes that may be occurring as a result of the *experience economy* and increased numbers of participants taking up an adventure sport activity. Immersive ethnographic and qualitative methods were implemented to better understand identified changes and issues, and quantitative methods were used to elaborate on, confirm and validate the findings. By doing this it was also possible to establish the efficacy of taking a lived experience approach to identifying and exploring emergent and currently unaddressed issues.

The study identified three key themes of interest to adventure sport participants: *provision of information, ability to accurately assess skill level and participate safely, and being a part of the adventure sport community*. These emerging themes were problematized, validated, and a process of co-design and ideation was used to establish and suggest a solution that could be implemented by the industry to solve the identified issues.

This study highlights the potential of using lived experiences to identify a problem, and employs new mixed methodologies to develop a better understanding of critical factors occurring within a specific industry and its associated communities. The study uses this knowledge to generate a designed solution. The theories and methods discussed by the study have transferable values, and could be used within a wide range of other subject areas, being especially useful when a hypothesis proves difficult to identify and define at the outset of a study.

Keywords: (auto) ethnography, adventure sport participation, design thinking (ideation), problematization, behaviour intervention

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Chapter 1. Introduction

Participation in adventure sport activities has increased significantly over the past ten years. There is no indication of a decrease now, or in the foreseeable future (Breivik, 2010). Online resources are often flooded with images of adventure sport participants taking part in activities such as skiing, rock climbing, off-road trail running and mountain biking in some of the most spectacular geographical locations in the world. And offline, one merely needs to walk meters through an urban town centre to note fashion trends which mirror that of the clothing typically worn by adventure sport participants. There are suggestions this increased interest in adventure sport activities has been influenced by the emergence of the *experience economy*, where consumers value experiences over possessions (Pine and Gilmore, 1999).

As with any change in behaviour, impacts can occur within the context in which the change is happening; two were considered to be of interest to this study: the experiences - of both those newer participants and those already involved with adventure sport activities, and the implications an increase in participant numbers may be causing to the adventure sport industry, and associated communities.

The study looked to further explore these changes and to gain a better understanding of exactly what is happening within the adventure sport industry, and associated communities, to establish the impact these changes could be having, and to use co-design and design thinking approaches to propose a response to these changes. For

the purposes of this study, the adventure sport activities that were taken into consideration fall into the mountain based activities category (e.g. mountaineering, rock climbing, skiing, trail running, etc.).

From the outset a wide-lens approach was taken, and the study was not directed by a defined hypothesis until the later phases of data collection, and following analysis of some of the data collected during the earlier stages of the study. This approach aligns with that of a grounded theory style study, preferring an iterative approach, allowing findings from one phase of data collection to inform the design of subsequent data collection methodologies. The study also takes influence from problematization (Alvesson and Sandberg, 2011), where a problem is identified during the course of practice (normally some form of design practice) and is further explored by considering the following:

- what the problem is
- why it is a problem
- who is affected by the problem
- what theories/concepts/assumptions underpin the problem
- what the implications of the problem are
- and, is solving the problem of any interest (to anyone)?

Although time consuming and not always straightforward to manage and implement, taking this approach allowed the researcher to take a macro view of adventure sport.

Perspectives and opinions were not drawn merely from observations, or participatory, directed, focus group style activities, but rather took a first-hand, lived experience perspective making use of all available resources including observing, participating, and facilitating specifically designed data collection methodologies. Because the research was approached with minimal preconceived notions, and with a willingness to allow the study to evolve organically, themes emerged that had not previously been covered by identified existing literature.

Taking this open approach facilitated a valuable element of exploration – in addition to a measure of trial and error. Some research approaches and methods were tested to explore guidelines laid out in existing literatures, and to establish if specific methodologies might produce tangible results. Some of those methods that were tested produced unsuccessful results, and caused an impact on timescales, as well as inducing a necessity to revisit old notions and ideas, and to explore and establish new ones. Following this approach of exploring and establishing the best methods allowed a new mixed (hybrid) methodology research model to be developed that could be used in the future and by other (design) researchers to explore their own constructed and/or identified problems within other disciplines, and other contexts, in addition to discovering the emergence of solid themes.

The following five objectives informed the direction of the research:

- develop a better understanding of the impact the *experience economy* has had on the adventure sport industry (in Scotland).
- analyse changes that have been occurring within the industry since the emergence of the *experience economy*.
- evaluate existing adventure sport provision, and explore if the needs of the newer adventure sport participant have been addressed and catered for.
- analyse how changes have impacted the adventure sport industry and associated communities.
- establish how identified gaps in provision could be addressed to meet the needs and requirements of adventure sport participants. Considering how to sustain positive impacts (e.g. economic) experienced thus far (and identify new scope for developments), and to address any negative impacts (e.g. increase in mountain rescue call outs, over populated venues) experienced thus far.

Chapter 2 presents a review of literature, beginning with an evaluation of the relationship between experience and adventure sport, and considering the effect the emergence of the *experience economy* has had on the adventure sport industry. The chapter then looks at participation statistics and reviews the data that are currently available, including taking into consideration the demographic of adventure sport participants. The chapter moves on to discuss suggestions for why people chose to take up and participate in adventure sport activities, including how this information can be used to predict future trends associated with increasing participant numbers.

Later in the chapter is a discussion of ethnographic methodologies and the potential benefit of implementing these types of methods to explore changes occurring within specific contexts, including using and interpreting lived experiences to develop a better awareness of complex industries (such as the adventure sport industry), and the complexities that may arise within these industries. This leads on to considering how adventure sport participants are perceived and presented by mass media sources, and the impact this may have on both existing, emerging and aspiring participants. Finally, the chapter explores a range of motivations that are experienced and/or expressed by adventure sport participants, and their rationale(s) for choosing to become an adventure sport participant.

Chapter 3 discusses the research methodologies implemented during the study, including an outline of the selection process and rationale applied to establishing the most appropriate methods. Since problematization does not require a definite hypothesis to be established until the latter stages of the study and/or data collection, the iterative nature of the methodologies are elaborated on in this chapter, including those theories used to underpin them. This approach permitted the development of a research model which could be used to explore the identified issues, as well as establish how to address them. This chapter outlines how the analytical methods were selected, as well as detailing participant recruitment (where necessary) for each of the methods, along with the procedure and data collection.

Chapter 4 provides an analysis of data collected and presentation of the findings. The objectives of the analysis phase were to identify changes that may be occurring within

the adventure sport industry, to establish what efforts are already being implemented in order to address these issues, and to consider how effective they are/have been. Findings were intended to be used to develop a solution to address issues that have, so far, not been addressed by any other means. The analysis process was conducted as a multi-phase activity, drawing influence from grounded theory, and underpinned using hermeneutic and heuristic phenomenologies. Details of the process are presented and discussed in this chapter.

Chapter 5 presents the results of the data analysis. The results of the qualitative and quantitative phases of data collection are discussed individually, including separate discussions of the respective methodologies that were implemented during each phase. Three priority themes emerged from the results of the study: *provision of information; ability to accurately assess skill level and participate safely; and, being a part of the adventure sport community*. These themes are discussed at the end of this chapter, and are presented as problems that the study looks to provide a solution to.

Chapter 6 suggests a framework, designed to be used by those who are part of the adventure sport industries included in this study (i.e. mountain based activities), as a potential way of addressing the themes that were identified by the study. This chapter also provides a response, similar to that which would be provided following a consultation process, about how the framework could be implemented and used, and the potential results that could be obtained following sustained use of this service. The discussion also considers the limitations of the framework, and suggests ways these can be overcome.

Chapter 7 presents the overall conclusions of the study, and discusses the new contribution to knowledge that has been provided by this work. A number of areas were identified as being potentially suitable, and interesting, for future research studies; these are also discussed in this chapter.

Chapter 2. Literature

2.1 Experiences and Adventure Sport Participation

2.1.1 Adventure Sport Activities

Coverage and exposure of adventure sport activities has become increasingly prolific via on and offline mass media channels. The advertising industry has identified the potential benefits of increasing adventure sport coverage, such as economic gain from sales of associated merchandise, and a growing interest in paying to take part in adventure sport activities. Puchan (2004,) identifies one of the key traits of adventure sport activities as being the diversity that is provided under the heading of adventure sport, making them a group of activities that are difficult to grasp by outsiders, and those who do not participate in adventure sport activities.

A precise definition of exactly what an adventure sport activity is could be described as ambiguous, and is often associated with alternative terms, such as; extreme sport, lifestyle sport, or action sport. However, when defining an adventure sport activity, the association is usually made with activities that are not perceived by the masses as mainstream or traditional, such as field, team, and gym-based sports (e.g. track running, football, weightlifting), and quite often include elements of risk, danger, or unconventional rules, and/or techniques (Puchan, 2004). A typical (not exhaustive) list of examples of adventure sport activities, widely discussed in academic and non-academic literature, could read:

- Rock climbing
- River kayaking
- White water rafting
- Skiing
- Mountain biking
- Inline skating
- Snowboarding
- Base jumping
- Free running.

The rationale used to define these activities may differ across schools of thought, for example, Puchan (2005) suggests the terms are still very much a topic of debate and could include action and extreme sports, while Breivik (2010) takes a wider perspective and discusses adventure sport activities as alternative, extreme, gravity, action, and lifestyle sports. Varley (2006) discusses adventure in a deeper, and perhaps more emotive and experiential context, as:

“...an evocative word for many people and attracts tourists to the world’s ‘wild places’, yet its meaning is a subjective and fluid one in modern society.” (Varley, 2006, p. 174)

This perspective allows us to consider the undefined parameters of adventure, and adventure sport activities, suggesting that the term could be an interchangeable one, with potential to become more, or less, of a component of a specific activity. This interchangeable influence could occur depending on the location, or perhaps as familiarity, skill and confidence is increased through longer-term participation, therefore, further increasing the complexity of attempting to define an 'adventure' sport.

Varley (2006) also discusses the meaning of the word 'adventure' itself, and how it can mean different things to different people. For example, for some participants who make a booking and pay for an 'adventure trip' using the services of a professional/provider level adventure sport participant will constitute an adventurous experience for them. Others, and this is likely to be the opinion of those participants with more experience, and therefore a higher level of skill, would argue that the booking of an 'adventure trip' provides participants with a safe option, that is controlled, and is too readily available to the masses to be considered adventurous. Varley presents the notion of 'adventure' as a theoretical one, and one that is subjective and very personal to each individual participant.

It is worth adding at this point, that there is potential for even deeper personal factors to have influence on how each individual participant defines 'adventure', for example, the physical capabilities of the participants (i.e. fitness) form part of the defining factor that dictates how far they stretch the term 'adventure'. This could be applied to the adventure sport of off-road, trail running – one participant may find she is only ever

able to sustain running for a 20km distance, however, she is capable of running in steep, exposed locations, and it is here she finds her adventure. Another participant may find he can sustain longer (ultra-marathon) distance runs, but may prefer more undulating, yet remote routes, and therefore finds his adventure in the feeling of being able to run for long periods of time, taking him to locations that are remote from civilisation. This is a very different definition of 'adventure' in comparison to the first runner, who enjoys the exposure to the elements. This presents two different perceptions and opinions of what an adventure is, yet both equally valid, and highlights the necessity to understand that 'adventure' is a very personal thing to each individual adventure sport participant, and not a component of participation that can be accurately defined or quantified, but one that is experiential and completely unique, made up of complex influences including, for example, the local environment, personal desires, or goals.

Varley's work (2006) also highlights the difference of opinion, based on skill level, about what adventure is. This alludes to the fluid nature of the term 'adventure', and so, it is possible that the definition of what is adventurous is a changeable one, and that participant perception of what is adventurous in one context, may not be the same in another. Additionally, as skill level increases, or is developed, it may be possible that participants will seek the feeling of adventure in a different way, and through different experiences, than they did when they first started participating in adventure sport activities. This could be related to the locations they chose to participate in as skill levels are increased, as well as the other participants they chose to spend time with.

However, adventure sport activities can generally be connected in that they provide the participant with an experience, development, or increase, of some sort of knowledge and/or learning, and a feeling of achievement - perhaps even extending toward providing a means of personal growth for both the participant themselves, and those they participate with in adventure sport activities (Kerr and Mackenzie, 2012).

Sport England (2015) communicate an awareness of the need to consider what people want to get out of participation, and highlight the importance of using this experiential information in order to tailor provision to meet individual needs of participants, and this can include the desire for 'adventure' to be a part of the experience. They anticipate the desire to participate in outdoor activities, including adventure sport activities, to offer 'huge potential', with a 3% rise in participant numbers since their 2014 report was published. The broad scope of the Sport England (2015) discussion, i.e. outdoors to include adventure but not including purpose-built environments (e.g. pitches, sports centres, etc.), helps in developing an idea of who participants are, and the diversity of participants who are emerging and participating in these types of activities, where they may not have done so before such activities became popular via the *experience economy* concept, as well as outlining motivations for choosing to participate in these types of activities.

The Sport England (2015) report suggests that, in addition to the 'adventurous' component of outdoors activities, there are added motivators (perhaps even benefits) for participants, for example, enjoyment of the environment (e.g. scenery, wildlife, flora), to be in fresh air (40% of those who responded to the Sport England survey

indicated that they participated in outdoors activities so they could enjoy being in the fresh air, Sport England, 2015, p. 23), and because they were looking for an alternative to 'traditional' sports. This search for an 'alternative' is also discussed by Wheaton (2005), who suggests that there is a move toward participating in more 'lifestyle' types of sports which can form part of participants' identity, to include the clothing they wear, how they express themselves, where they prefer to socialise, the music they listen to, etc. Lifestyle choices, and the desire for an alternative option can also be linked to the notion of adventure, and can be further linked to the needs and requirements of individual participants, since the influences are likely to vary between participants even though they may participate in the same activity in the same location.

In terms of what is available to facilitate adventure sport participation in Scotland, Page (2003) estimated there to be approximately 1150 adventure and activity providers in Scotland (Greenwood and Yeoman, 2007). Table 2.1 below provides a summary of the market segmentation.

Table 2.1: Summary of adventure market segmentation in Scotland (adapted from Greenwood and Yeoman, 2007 and Page, 2003).

Factor	Detail	Segmentation
Main Activities	Water sports	18%
	Multi-activity	16%
	Mountain biking	12%
Location	Highlands	26%
	Argyll	17%
	Tayside	9%
Number of employees	F/T - 1	29%
	F/T - 2	22%
	F/T – 3-4	12%
	P/T - None	28%
	P/T - 1	23%
	P/T - 2	13%
	P/T – 3-4	13%
Main months	Spring Summer	Majority
	Autumn/Winter	Half
Routes to market	Trade/specialist magazines	53%
	Direct mail	48%
	Press	47%
	Tourist board	45%

These figures indicate that the majority of adventure businesses in Scotland are classified as SMEs, employ a small number of staff, and are based in a rural location. Greenwood and Yeoman (2007) also suggest that the figures reflect participation numbers that are devolved from those participants who take part in adventure sport activities as a hobby, and are therefore likely to fall into the novice level of participant. They highlight that those participants who take part in activities such as mountaineering, rock climbing and/or mountain biking on an independent basis are not factored into the figures outlined in Table 2.1 above. This would suggest that market segmentation statistics are not necessarily reflective of the complete population of adventure sport participants in Scotland, and provide more insight into those less experienced participants who are an opportunity for SMEs that are providing a service related to adventure sport. Additionally, this suggests that more work is needed to permit a more 360-degree based insight and understanding of adventure sport participants, to include what motivates them, what facilitates their participation, what barriers do, or have, they experienced while attempting to access adventure sport activities – effectively, there is the need for a better understanding of the lived experiences of adventure sport participants, with scope for this information to be useful to the adventure sport industry, particularly in terms of growth and being able to cater for the needs and requirements of all adventure sport participants.

2.1.2 The *Experience Economy* Effect on Adventure Sport Participation

Pine and Gilmore (1999) introduced the world to the *experience economy*, predicting that it would replace the agrarian, industrial, and serviced focused economies to eventually come to the fore in response to consumer demands, evolving to become one of the most important economic offerings. During the past two decades much has been documented about the emergence and growth of this new economy, and as such the concept of an *experience economy* has been readily discussed and brought to life. Schmitt (1999) described it as a revolution that demonstrated the potential to change the face of marketing in the future. Kelley and Littman (2008) applied the concept beautifully within the discipline of design thinking, describing how consumers have replaced the preference for gathering up '*things*' (possessions), in favour of now filling 'boxes' with memories, stories and experiences.

Experiences, however, are much more difficult to quantify or define, since the potential to vary greatly from person to person exists (Feldman et al., 1993). It is therefore possible that defining problems that may be occurring within those industries which have benefited from the emergence of the *experience economy*, could be less straightforward and may benefit from a different approach. This demonstrates potential to explore how different methodologies than those normally used, such as questionnaires and surveys, could be implemented, and used to produce more accurately identified problems. For example, by using an interview method, it would be possible to explore experiences and opinions that go beyond defining the degree to which something is liked, or not liked, how much a person spends on a specific

thing, how much time they spend doing it, etc. Thereby presenting an opportunity to develop a deeper level of understanding that could be used to enhance or supplement the quantitative data generated from questionnaires and surveys.

Poulsson and Kale (2004) discuss the relevance of the *experience economy* to the adventure sport industry and highlight the growing trend for the average person (i.e. a non-professional in a particular field) to become absorbed in the search for new and extraordinary experiences, even being willing to pay for the privilege. They also illustrate the narrative of these customers who are willing to scour the globe in search for experiences that excite and engage them. Puchan (2004) takes a deeper, and perhaps more emotive, perspective on the *experience economy* concept, stating that

“people are looking for new ways to define their lives and to escape from an increasingly regulated and sanitised way of living.” (Puchan, 2004, p. 177)

The *experience economy* is a critical contributor to the exceptional growth rate occurring within the adventure sport industry. This is described by Puchan (2004) as more significant than just a fleeting trend but as a “sign on the times”, with the desire to become an adventure sport participant showing no indication of waning, but rather of being a long-term lifestyle trend, i.e. a behavioural pattern associated with activities, interests, attitudes, opinions, and how one chooses to spend their income, that reflects changes occurring across a postmodern society where people are searching for ways to challenge themselves and provide themselves with a valid, satisfying and achievable means of escapism. Breivik (2010) helps us make sense of this, and

discusses how participation in adventure sport activities may offer consumers things they find difficult to achieve when participating in other sports or recreational pastimes:

“Adventure sports point to the key ideas and developments in modern and post-modern society such as individualism, technology, self-realisation and transcendence.” (Breivik, 2010, p. 261)

Additionally, Breivik predicts that more females than males are likely to become engaged with this movement in the future, and believes that these women may be pioneers and trendsetters within some adventure sport disciplines and activities (2010).

Considering this type of consumer behaviour, which favours experiences over possessions, from a lifestyle trend perspective, Trend Watching (10 Crucial Consumer Trends for 2013) uses the term ‘*Virgin Consumers*’ who are:

“unfamiliar with many of the products, services, apps, experiences or brands they encounter every day, far from being coy, lust after, try out and experiment with all these new brands, products, services and experiences more than ever – as long as brands make them effortlessly simple, intuitive and fun. Consumers are encountering tons of products and brands for the first time. New brands are more trusted or even respected than their familiar, historical counterparts. More consumers than ever are convinced that the ‘new’ will help

them improve every aspect of their lives. There are numbers of consumers who want to dive into, try out, experiencing and experimenting with the new products and services being launched on a daily basis.”

Greenwood and Yeoman (2007) appreciate the impact the *experience economy* has had on adventure sport participation specifically in Scotland, and take a macro approach in exploring more specific factors that may contribute to the trend. Table 2.2 below illustrates the key drivers identified by Greenwood and Yeoman (2007) which can be used to better understand the factors that have contributed to growth within the adventure sport industry in Scotland. These factors can also be used to increase our understanding of the drivers which may influence future participant numbers.

Table 2.2: Drivers of increased adventure sport participation in Scotland (Source: Greenwood and Yeoman, 2007, ‘What will activity and adventure tourism look like in 2015?’, VisitScotland).

Driver	Description of Driver
1	Economy and disposable income
2	Demographics
3	Countryside access (Land Reform Act)
4	Scotland as the UKs outdoor capital
5	Environment/weather
6	Consumer perceptions
7	Health and the outdoors
8	Rise of regulation culture

2.2 Adventure Sport Participation Statistics

The emergence of the *experience economy* has been documented as a major contributing factor to the growth of participant numbers within the adventure sport industry (Poulsson and Kale, 2004). This growth has assisted providers and

professionals located in Scotland that offer adventure sport activities (Greenwood and Yeoman, 2007). The exact impact of this increase is perhaps most prominent and visible when witnessed for oneself, as a participant – increased presence of participants at popular and easily accessible venues, increased equipment and clothing options by retailers, female-specific items, and an increase in provision of resources to facilitate participation (e.g. skills courses, development of locations, etc.) (BMC, 2003). Existing published statistics are in the emergent phases, and some may be from unreliable/unvalidated sources, however, when considered alongside personal observations, they do assist us in beginning to develop an understanding of how approaches toward adventure sport participation are changing.

Taking into consideration figures about sporting participation in general, results from the Scottish Household Survey (Annual Report, 2014) found that 78% of adults in Scotland had participated in some form of sport and exercise during 2014, and this was the same figure as reported for 2013. The majority of these adults indicated that the activity they participated in most was walking, when this activity (walking) was excluded from the study, the survey found that 51% of adults in Scotland participated in some form of sporting activity, with the majority of those participants being male. The type of activity (excluding walking) that was participated in by those who contributed to the survey did not include specific adventure sport activities; however the results do indicate that participation in sporting activities has increased in Scotland since 2007. Sport England (2015) focus more specifically on adventure sport activities, and suggest that 47% of those active participants surveyed (n=8.96 million) participate in some form of outdoor and/or nature based activity once per week or more, 34% occasionally, and 18% on a monthly basis (Source: MENE, 2013/14). Of

these participants, they found that 61% participate throughout the year, with 16% participating for most of the year – three seasons. The most popular types of activities being walking (27%), mountaineering (14%), and mountain biking (9%) – basically mountain based adventure sport activities. They predict future interest to be very much in favour of the mountain based activities; no reason is provided for this, but it can most likely be attributed to the accessibility, and affordability of these activities, highlighting an opportunity for the adventure sport industry to tap into and look at methods for catering for the needs of these predicted future participants.

Looking more closely at mountain based adventure sport participation, the 2003 British Mountaineering Council (BMC) study reported a steady increase in participant numbers, however, they also discuss issues in respect of existing statistics, and refer specifically to the difference between the Mintel (1993) statistics and their own BMC statistics, believing there to be anomalies in the recorded statistics on both an overinflated and an underinflated basis. This is confusing, and the BMC are therefore unable to provide an exact figure representing industry growth for the mountain based adventure sport activities. According to the most recently available and topic appropriate Mintel Intelligence reports: 'Sporting Activities in the Great Outdoors' (January 2002 and 2005) it was estimated that 48% of the UK population participate in adventure sport activities (e.g. mountain biking, kayaking) at least once per year, and 25% of the UK population participate in adventure sport activities on a regular basis (once per month or more) – this is an increase of more than 40% since 1989. In figures, this translates to approximately 22.2 million adults participating in adventure sport activities once per year, and 11.6 million participating once per month or more frequently (Puchan, 2004).

In terms of demographics, a typical adventure sport participant is assumed to be male, aged 16-24 (25%), followed by 25-34 (17%), and 35-44 (17%), and considered to be part of the more affluent AB or C1 socio-economic groups (Mintel, 2005). They most likely have access to a car, are in employment (78%), and are white and British (>80%) (Sport England, 2015).

The BMC (2003) study may not have been in a position to access or to take into consideration the 2002 Mintel Intelligence report findings. The BMC does, however, provide a set of anecdotal observations that echo the Mintel (2002) findings, and support that statement that there has been a clear increase in interest of adventure sport activities in the UK, as indexed by:

- increased number of retail outlets,
- pressure for parking spaces at adventure sport venues,
- BMC membership figures – year-on-year increases,
- increased media coverage – on and off line, and;
- increased fashion interest in outdoors clothing.

Statistics specifically representing gender participant figures are again considered to have been produced by potentially unreliable sources, however, they too are the best available. According to the BMC (2003), it is estimated that of their (the BMC) registered members 84% of 19-30 year olds are male; and, 89% of 31-45 year olds

are male. For the females: 19-30 year olds make up 16% of registered members; and, 31-45 year olds just 11%. The BMC survey (2003) found the most popular adventure sport activities to be mountain walking (summer), mountain walking (winter), and, rock climbing.

“White males aged around 30 who have been climbing for more than 10 years and lead competently up to VS [very severe] were introduced to climbing by friends or parents and climb at weekends and holidays. As well as visiting the climbing wall occasionally in 1990, their average household income was over 18k reflected their occupation as a professional manager” - Dan Morgan (Quote source: https://www.thebmc.co.uk/bmcNews/media/u_content/File/press/factsheets/ParticipationStats03.pdf)

Sport England (2015) suggest a similar picture, indicating 65% of adventure sport participants to be male, and 35% female. However, they also suggest it possible to profile participants into different segments, of which they discuss eight. These are outlined in Figure 2.1 below.



The Explorer

- Being part of the natural world
- Exploring the natural world
- Driven by emotions
- Revolves around exploring and learning
- The physical activity may be secondary to others, e.g. bird watching, photography

The Challenger

- Puts their body on the line and battles against nature
- Pushes themselves to achieve specific goals
- May not necessarily enjoy most of the experience
- Enjoyment comes from learning about themselves their capabilities
- Apply learning from the experience to normal life

Fitness in Nature

- Keeps fit outdoors for the fresh air and freedom
- Prefers the outdoors to the gym or indoor sports
- Sense of physical and mental wellbeing is important
- Likes to challenge self
- Competition is not important

The Tribe Member

- Committed to their sport and take it very seriously
- Training and skill improvement is important to them
- Like to compete - and win!
- Likely to be part of a club

The Adventurer

- Lives life to the fullest
- Enjoys the sense of adventure as well as challenging themselves
- Personal achievement is as important as having fun with friends
- The countryside is their playground

The Learner

- Visit the outdoors for learning/educational development
- Use physical activity as a way to learn and/or personal development
- May discover a love of sport along the way

The Freestyler

- Mostly younger people who like to take part in 'lifestyle' sports
- Comes with an additional cultural component (e.g. clothing, music)
- Activities are perceived as 'cool' and aspirational
- Participants feel they are defined by this 'lifestyle'

The Thrill Seeker

- Enjoys 'extreme' sports and activities with an element of 'risk'
- Looks for the 'adrenaline rush'
- Enjoys the feeling of being out of control - providing the 'risk' is managed

Figure 2.1: Adventure sport participant profiles (adapted from Sport England, Getting Active Outdoors report, 2015, p. 31)

The Explorer participant makes up 33% of the active outdoors market, and is most likely to be female, aged 35 to 54 years old, and likely to participate on a sporadic, every few months basis (42%), for the purposes of relaxing and spending time with friends; competition is not important to this type of participant. The types of activities the Explorer might participate in are hill walking (31%) and swimming (30%), and this is likely alongside another activity such as bird watching or photography. Barriers for the explorers are lack of opportunities, perhaps because most members of this group reside in an urban location and need to travel to more rural areas to participate in outdoor activities, and have family commitments. This group is further distilled into family explorers (61%), lone explorers (12%), and social explorers (27%).

Forming 21% of the active outdoors market are the Challengers. This group is generally male (74%), and likely aged 24 to 54 years old. Challengers participate because they want to challenge themselves and achieve the health benefits that come with high intensity participation. Competition against others is not a key motivator; instead group members prefer to push themselves to achieve personal goals associated with participating. This group is most likely to participate on a regular, weekly basis (53%), and the types of activities include mountaineering, running, boot camps, paddle sports and snow sports. They also like challenges, such as long distance and multi-day eventing. Barriers include injury and health issues, and this could be attributed to pushing oneself harder and harder in order to achieve personal goals and objectives. This group is further distilled into family challengers (24%), lone challengers (35%), and social challengers (41%).

The Fitness in Nature participant makes up 17% of the active outdoors market, and is an equal split of male and female participants, with most being aged over 35 years old. General health and exercise is of high importance to this group, but they also like to challenge themselves, preferring fresh air and being in nature to the gym. Most are likely to participate on a regular, weekly basis (53%), and the types of activity they like include orienteering, hill walking, and climbing, and some (30%) also like to use outdoor gyms. Barriers include injury and health issues. This group is further distilled into family fitness in nature (52%), lone fitness in nature (21%), and social fitness in nature (28%).

The Tribe Member segment makes up just 9% of the active outdoors market, with participant being predominately male, aged 24 to 44 years old. Members of this group are least likely to participate on their own, and enjoy the feeling of being part of a team. They participate for the adventure, challenge, and experience, but also like to develop existing, and learn new, skills. They prefer to participate with friends rather than other family members, and competition is of high importance to Tribe Members. Many Tribe Members report being part of a club (25%), with frequent water sports participants indicating the greatest likelihood of being part of a club; this is likely because it is not recommended to go on the water alone. Most participate on a regular, weekly basis (42%), and the types of activities that Tribe Members like include mountaineering, mountain biking, canoeing and kayaking. Barriers to participation include work commitments, and this is likely reflective of the age group of the majority of participants who make up this group. This group is not further distilled by Sport England (2015) into family, lone, and social groups. No reason is provided for this, but it is assumed that it can be attributed to the group, club based nature of the Tribe Member segment.

Forming just 7% of the active outdoors market, is the Adventurer segment. This group appears to be mostly made up of family groups, and is therefore not discussed in terms of male and female participants. Most members of this group are indicated to participate in order to 'collect experiences', for fun, and for an element of challenge. Competition is not important to the group members, nor are they particularly interested in skills development, but they do seek diversity. Interestingly, the Adventurer segment is discussed as being a useful energy outlet for teenagers who would otherwise be liable to express their energy as anti-social behaviour. Most Adventurers will participate on a sporadic, every few months basis (34%) or on a regular, weekly basis (32%), and the types of activities they like include camping, climbing, diving, and snow sports. Most activities require a degree of competence, and the behaviours of this group demonstrate potential to cause issues in terms of risk management and being able to safely participate. Access to appropriate locations was reported as a barrier to participation for this group. This group is further distilled into family adventurer (59%), lone adventurer (7%), and social adventurer (34%).

The Learner group also makes up just 7% of the active outdoors market, and comprises mostly males, aged 24 to 54 years old. Learners participate to achieve a feeling of self-worth, more so than the other segments, they also want to challenge themselves, have fun, and learn new skills. They are not so interested in making friends or competing against others. Most Learners participate on a regular, weekly basis (38%) in activities such as orienteering, running, mountain biking, and orienteering. Barriers to participation include time spent participating in other activities, and not having enough opportunities – indicating that this group could present opportunity to the adventure sport industry in terms of provision. This group

is not further distilled by Sport England (2015) into family, lone, and social groups. No reason is provided for this.

Freestylers form a 4% share of the active outdoors market, and are mostly male aged 16-24, however, there has been a noted growth of female participants in recent years, and this ties in with discussions provided by other researchers, such as, Puchan (2004), and Wheaton (2005). The Freestylers are not so interested in traditional sports; they look for activities that can provide them with an element of culture that includes things like fashion, music, location, expression, and identity. This group spends time participating alongside their friends, and the activities they participate in form a part of their lifestyle. They are likely to participate on a regular basis throughout the year, and like activities such as surfing, skateboarding, and kitesurfing. This group are likely to participate in different winter and summer (seasonal) activities, and are the group most likely to engage in social media content around adventure sport. This group is not further distilled by Sport England (2015) into family, lone, and social groups. No reason is provided for this, but it is assumed that the demographic nature of this group is the main reason why this group has not been distilled in to the sub-segments.

Finally, the Thrill Seeker segment accounts for 3% of the active outdoor market, and comprises mostly males (80%), aged 24 to 34 years old. This groups looks for the thrill and buzz of participating in activities that provide adrenaline, challenge and adventure. The Thrill Seekers are not looking for health, exercise, or competition; they thrive off the potential 'risk' factor that is associated with the activities they participate

in. They are most likely to participate on a regular, weekly basis (53%) in activities such as base jumping, cyclocross, and surfing – indicating they likely have a high disposable income, since these types of activities are generally expensive to take part in. In fact, cost was reported to be a key barrier to this type of participant. This group is not further distilled by Sport England (2015) into family, lone, and social groups. No reason is provided for this, but similar to the Freestylers the demographic is assumed to be the reason why.

The Sport England (2015) participant segments assist in illustrating different approaches to participating in adventure sport activities, and the types of demographic that can be most likely found within each segment. However, it is fair to argue that there will be a degree of overlap between the segments for most participants, and with potential for individual participants to overlap between segments depending on which activity they are participating in, demonstrating a definite need for more focused research specifically targeted toward increasing our understanding of actual adventure sport participant numbers and the activities they participate in, as well as behaviours toward participating. It is clear from those statistics that do exist that there has been a definite increase in both interest in adventure sport and actual participation in adventure sport activities. Brymer (2010) references findings recorded in the American Sports Data (2001), citing Pain and Pain (2005):

“over the past two decades, participation rates in extreme sports have grown exponentially far outstripping the growth rates of any other sporting activity.”

(Brymer, 2010, p. 218)

Visit Scotland (Tourism Research Scotland) conducted a study in 2006 (Adventure sports research) exploring adventure sport participation within Scotland. The study looked at motivators, customer profiles, and future prospects in relation to adventure sport participation trends in Scotland. The study, which sampled 855 respondents, found the keenest interest in respect of adventure sport activities actually participated in to be mountain walking, mountain biking, and paddle sports, such as river canoeing and river kayaking. In terms of responses relating to motivating factors, these included: because participating in adventure sport activities is fun (79%), to enjoy the scenery (77%), to improve fitness levels (73%), and because the challenge offered by participating in adventure sport activities is enjoyable (72%). Looking at the demographic, the report found the majority of adventure sport participants to be male (62%), aged 25-44, being normally resident in Scotland (50%) and England (50%), with a third reported as having young children/being part of a young family. The study notes an increase of this group of participants (those with young children) and indicates that previous research found this group to be less well represented as adventure sport participants.

Greenwood and Yeoman (2007) followed this report with a study exploring 'What will activity and adventure tourism look like in 2015?'. They felt that adventure in Scotland was a diverse sector, and therefore difficult to classify what exactly constitutes the sector. For the purposes of their study they take the VisitScotland approach of dividing sporting activities into four categories: Earth, Air, Water, and, Ice – a useful and sensible approach that permits clear definition that can be applied to different adventure sport activities, as well as being inclusive of the different disciplines. Additionally, they briefly mention the risks associated with participating in adventure

sport activities, and highlight the varied parameters associated with perception of risk based on level of experience and/or skill of the participant, suggesting that ability to assess risk level associated with participating in an adventure sport activity increases as experience is increased.

In 2010 VisitScotland (Tourism Research Scotland) commissioned a follow-up (to Adventure Sport Research, 2006) report focusing on 'Adventure Travel in Scotland'. This report estimated that the market value is predicted to grow by 70% over the next three years (YouGov report, 2005) from 2.5 million trips to 3.7 million trips, and that the average spend per (holiday) trip taken during 2008 was £235 per household. However, the report does not specify how many trips per household were taken. This does still indicate that the credit crunch did not appear to have affected the desire to participate in adventure sport activities; instead the study found an increased desire for meaningful experiences and an increase in focus on personal interests.

In contrast, the VisitScotland study also highlighted a key market segment of interest - those on a lower budget, such as students and recent graduates who the study termed as "*wanna be adventurers with aspirations which are as yet unfulfilled*" (VisitScotland, 2010, p. 15). One objective of the Scottish tourism sector in 2007 was to increase income (revenue) generated by participation in adventure sport activities in Scotland by 50% by 2015 (Greenwood and Yeoman, 2007). In terms of results from the 2010 study, this objective appears to have been taken into consideration since one suggestion made by the report is that adventure sport providers should make an effort to work with their customers (adventure sport participants) in order to better

understand specific motivations and how these might be catered for, with the potential to cross-collaborate across different activity disciplines. As an approach this aligns with the theory of problematization, where a research question is constructed following the identification of a problem (Alvesson and Sandberg, 2011), and of taking a co-design, co-creation approach, whereby the end user is involved in designing the end product. Taking this approach generally results in a high uptake rate of users (Veryzer and Borja de Mozota, 2005), and can have a positive impact on the success and indeed sustainability of any product, service, etc. which has been designed to meet a specific need or purpose.

Breivik (2010) describes the adventure sport industry as being adaptable, innovative and accustomed to embracing change. It is true that the adventure sport industry is generally recognised for its intuitive ability to adapt to, and implement, new and innovative developments, utilising design and cutting edge technologies to manufacture kit, equipment and clothing. This makes it a useful industry to test the application of a new research model, and to establish if such a model could be used to identify emerging, yet undefined, changes. The adventure sport industry has also demonstrated an ability to utilize, without saturation (in fact, regularly whetting appetites for more), online promotional resources and social media channels to communicate what it has to offer. Adventure sport has become a mainstream option (Puchan, 2004), and previously may have been obtainable only by those with the cash funds, ability, and insider (community links) information, and contacts required to become an adventure sport participant.

One finding discussed by Greenwood and Yeoman in their 2007 study goes beyond reporting of participant statistics and motivations for participating in adventure sport activities. They suggest that different types of adventure sport participants respond differently to information about adventure sport activities. The less experienced participants appeared to favour information that required a degree of effort to source, but came from reputable and reliable, yet generally generic sources, such as tourism websites. Once experience begins to develop, participants would then attempt to obtain information from industry sources, such as specialist magazines. Those participants with a good deal of experience were more likely to rely on their own knowledge and information provided to them on a word-of-mouth basis. A key point to note was that Greenwood and Yeoman (2007) suggested that those participants who were very new to participating in adventure sport activities, in that they were trying an activity for the first time (sampling), demonstrated a trend toward not implementing any sort of pre-planning process prior to arriving at the venue which they intended to participate in an activity. Although Greenwood and Yeoman do not specifically discuss this as having potential to have an impact on participants' ability to assess their skill level, and therefore participate in a safe manner, it does clearly demonstrate potential to correlate with level of skill and ability to accurately assess the level of risk associated with participating in a particular adventure sport activity (Llewellyn and Sanchez, 2008).

Scotland has some of the most attainable and accessible world-class adventure sport facilities (Greenwood and Yeoman, 2007 and SportScotland, 2012) that are available to enjoy on a year round basis. The adventure sport industry in Scotland has reaped benefit from an increase in participant numbers. However, although much effort has

been directed toward a better understanding of adventure sport participation and future trends have been offered in respect of economic growth within the industry, there is a gap in existing literature that leaves us with an unclear understanding as to how one approaches the actual process of adventure sport participation. The identification of this gap demonstrates scope to be further explored by this study.

2.3 How are adventure sport participants approaching participation?

It is generally accepted that in order to understand any community it is useful to build a picture of what members of that particular community do. This can be done while acting as a part of that particular community (Wenger, 2000; Ahmed and Palermo, 2010). Approaches towards better understanding adventure sport participation can be actioned using a similar approach (Greenwood and Yeoman, 2007). However, before implementing any type of immersion within a community, an overview of the market is required. INSIGHTS conducted extensive market research (study published 2003) about ways that people approach adventure sport participation. The results illustrate how they found the adventure tourism market to be segmented; these segments are summarised in Table 2.3 below.

Table 2.3: Adapted from INSIGHTS 2003: Summary of adventure tourism market segments.

Segment	Description	Frequency	Example
Sampler	Trying an adventure sport activity for the first time	Occasional	Corporate group
Learner	Learning or trying to improve	Occasional	Training groups, individuals
Dabblers	Occasional participants who take part during leisure time	Sporadic	Groups of friends, individuals
Enthusiasts	Take part in an adventure sport activity and are very keen on it	Regular	Experts, individuals

Greenwood and Yeoman (2007) go on to state that people may fall into, or overlap across, more than one category depending on the particular activity they participate in, for example, an intermediate mountain biker may also be a novice rock climber. And it is the level of interest that encourages development from one segment to a higher one. Table 2.4 below provides a summary offered by Greenwood and Yeoman (2007), adapted from INSIGHTS 2003, of the relative size of individual market segments based on activity type. Kerr and Mackenzie (2012) add to this, believing that one characteristic found to be a motivator for a person to become an adventure sport participant is the desire to not be labelled a particular stereotype. Stereotyping an adventure sport participant into for example segments such as those outlined in Table 2.3 above may not be appreciated by participants. It is also something that could be quite difficult to do.

Table 2.4: Relative size of individual market segments based on activity type (Source: Greenwood and Yeoman, 2007: Adapted from: INSIGHTS 2003).

Market segment				
	Samplers	Learners	Dabblers	Enthusiasts
Activity				
Mountain biking	10%	10%	35%	45%
Horse riding	25%	10%	15%	50%
Water sports	7%	10%	10%	73%
Adventure sports	8%	10%	10%	72%

Puchan (2004) also explored this theory, and offers another perspective, suggesting that since adventure sport activities have become more mainstream there has been an increase in demand for the services of adventure sport providers. Puchan highlights the potential that the make-up of adventure sport participants to be different than it was pre-*experience economy*, and that this could be a contributing factor in increasing demand. This suggestion could be difficult to define. This is because the impact of this change is in the emergent phases, and therefore it may be impossible to measure and compare the experiences and approaches of adventure sport participants in a way that reflects their opinions pre-*experience economy* and their current opinions.

The views of Puchan (2004), Greenwood and Yeoman (2007), and Kerr and Mackenzie (2012) lead us to the understanding that newer adventure sport participants may be approaching participation in a different manner than those participating pre-*experience economy*, that is in a more sporadic, casual, and recreational approach, even though the attraction and draw that encourages participation is the same. For example, some of the newer participants may have existing hobbies they wish to continue pursuing; they may have long-standing commitments with family and friend that they are unable to alter dramatically. There is also the financial perspective. Participating in adventure sport activities can be an expensive pursuit, and this is a factor that will have to be taken into consideration by some of the newer participants, and may have an impact on the approach they are able to take when deciding to take part in an adventure sport activity. This creates an opportunity to better understand these new adventure sport participants and to consider how they could be better catered for, while at the same time constantly sustaining an awareness and appreciation of retaining the ethos of the adventure sport

industry (i.e. ensure that no responses, in terms of better provision, present potential to cause changes to what being an adventure sport participant is all about), because, of course, the ethos of the adventure sport industry was likely one of the initial motivating factors that influenced the decision to actually become an adventure sport participant.

2.4 Using Ethnography: Motivations for Exploring Lived Experiences as an Integral Element of the Study

Specifically thinking about ways to use the experiences of adventure sport participants to develop a better understanding of the adventure sport industry and associated communities was considered. It was anticipated that there may be great potential in exploring the stories, lived experiences and cultures of participants as a major element of the study. Taking this approach fitted with that of Ahmed and Palermo (2010), who suggest that becoming part of a community permits better understanding of it, as well as the qualitative approaches (semi-structured and open-ended interviews) taken by Taylor (2011) to explore participatory influences for mountain bikers. Therefore, the same, or similar, approaches could be implemented to increase our understanding of changes that are occurring within the adventure sport industry, and to consider how it may look in the future.

Exploring the lived experiences of adventure sport participants in Scotland was identified as a key factor that could be used to assist in directing this study. Additionally, concern was expressed by the BMC (2003) about relying on existing statistics, suggesting them to be potentially unreliable, of limited scope, and in need

of further development (Creswell, 1998) in terms of providing a clear understanding. Therefore, an indication was identified that it could be beneficial to approach data collection from a first-hand perspective in the first instance, and prior to application of methods that could be used to quantify identified issues later in the study. Thus, the perspective is taken that a complete understanding of the issue may be formed based on a mixed methodologies approach which considers the lived (what is actually happening in respect of adventure sport participation) alongside the statistical (validation of what is happening) (Creswell, 2013).

According to Heidegger (1962), as humans we are primarily concerned about our own existence and seek out ways to better understand it. It is this understanding that Pernecky and Jamal (2010) believe to occur as a result of cultural and historical interpretations that can be found in our relationships and through “*social meanings contained in language*”. This approach presents itself as being useful when exploring experiences and seeking to better understand them.

In order to gain this deep understanding of lived experiences, Smith, Flowers and Larkin (2009) suggest it imperative that the researcher engage in a rigorous and iterative process of explication (Brymer & Schweitzer, 2013). It is this process that allows for the deep understanding of the lived experience that the researcher may interpret and make sense of (Heidegger, 1962). Implementing a hermeneutic approach within this study allowed the researcher the opportunity to understand and interpret meanings behind the experiences, gaining a deeper understanding of, not just the experience itself, but also the traditions, heritage, history, and social

implications that come, or may come, with being an adventure sport participant. Taking this approach aligns with that which is normally implemented as part of design thinking and co-design processes, where a 360-degree perspective allows for an understanding to be formulated that can be used to feed into answering a hypothesis which although has been informed by an existing body of available information and knowledge, cannot fully be defined without conducting some sort of further exploration of the issue (Sanders, 2002).

Taking a qualitative approach does not align with traditional research methodologies normally used in the subject area of adventure sport activities. Pernecky and Jamal (2010) suggest that associated publications generally avoid phenomenological discussion (Ritchie, Burns and Palmer, 2005; Veal, 1992) and approaches (Jennings, 2001). One possible reason for this is the lack of clear methodical guidance on the use of qualitative methods (Obenour, 2004), especially within research focusing on the *experience economy*, which includes adventure sport activities and participation. This does seem unusual, especially considering the *experience economy* is primarily related to experience. A second reason offered by Pernecky and Jamal (2010) is that doing phenomenological research can be highly complex since it requires commitment in terms of the time required to implement it effectively, and requires the researcher to be actively involved and attentive throughout the study, in addition to possessing an in-depth knowledge of the philosophical underpinning(s) of the particular/chosen approach. Not all researchers will have, or even want, the opportunity to become so intrinsically involved in a study. This could be for a number of reasons, such as time constraints, or the necessity to learn a great deal of new skills in order to become so closely involved with the participants. Under these circumstances, and perhaps even

pressures, it is understandable that research methods that can provide a more efficient return while meeting the requirement of the study are implemented in place of the generally more time consuming qualitative methods. Of course, a degree of confidence in collecting, interpreting, and presenting qualitative data, in an objective manner, is also required for qualitative methods to work, and it is necessary for the researcher to possess this confidence and associated skills.

However, Jennings (2001) does note that there has been an increase in, and emphasis on the emerging use of, qualitative approaches when exploring experiential topics. Jennings's work specifically refers to tourism studies, a field which has traditionally favoured the use of scientific and quantitative methods. She found that these types of research methods were useful and relevant when attempting to learn more about tourist perceptions, opinions and experiences. These methods could also be applied within studies exploring the *experience economy*, as the focus - by definition - is similarly on an individual's perception and experiences. Consistent with this view, Wheaton (2000, 2003, 2004, 2007) has favoured the use of immersive ethnographic approaches specifically within the context of sport. Her work explores identity and cultural aspects of adventure sport activities, and highlights the importance of using qualitative methods to highlight and understand the more complex components of participating in adventure sport activities, going beyond the standard quantitative approaches of the who, what, where, and when.

2.4.1 The Hermeneutic Phenomenological Approach

The hermeneutic phenomenological approach was introduced by Heidegger in 1927 (translated into English in 1962), suggesting that meaning of common practices be explored, understood and interpreted. The approach takes the position that meaning is not simply drawn from what one has, but also from what one is. Hermeneutic phenomenology investigates and interprets a phenomenon, as experienced in life, through phenomenological reflection and writing, developing a description of the phenomenon that leads to an understanding of the meaning of the experience (Osborne, 1994). Flood (2010) relates this to the hermeneutic phenomenologist, and how researchers who implement a hermeneutic approach will place focus on analysing, interpreting and describing the meanings of the *da-sein* (the situated meaning of a human in the world (Heidegger, 1927/1962)), and will explore how these interpretations might influence decisions, rather than merely looking at the surface explanation and description of a narrative as told, and perceived, by those participants.

Table 2.5: Source: *Hermeneutic phenomenology: preliminary guidelines for research in tourism studies* (Pernecky and Jamal, 2010, p.1067).

Reason for research	To study lived experience and understand how experiences are interpreted and understood (the meanings of these experiences to the participants involved).
Ontology	(Being-in-the-World) Realist: The World and Nature can be accessed by means of our being-in-the-world: we make sense of our being and lifeworld (the world we live in) through reflective representation and analysis. All understanding of our being-in-the-world is perspective and shaped by pre-understanding, historicity, culture, practice, background, language etc.). There is “realness” to the world and to our experiences; <i>Da-sein</i> ’s involvement plays a key role in constructing “truth”.
Epistemology	Hermeneutic: The main focus is on interpretation, context, and language; what counts as “truth” is based on interpretation, co-construction and reflexive participation. Both the researcher and the participant are self-interpreting beings who live in the “real” world and hence both play an important role in the process of arriving at understanding through dialogue and interpretation. Language plays a key role.
	<p>Interpretive and dialogic: The researcher seeks to interpret and understand the lived experience; searches for meaning, analyses, critiques, and negotiates between theory and data, and is guided by hermeneutic phenomenology. The focus is on relationship between self and other, rather than “subjective” or “objective” stance.</p> <p><i>Method:</i> Interviews and participant observation, writing rich description aimed at understanding and meaning. Co-construction, reflexivity, and historicity are important guiding principles to this interpretive task (please note that there are no prescribed methods and these are only suggestions).</p>

Pernecky and Jamal (2010, p. 1055) discuss the potential of hermeneutical phenomenology in exploring experiential issues related to being-in-the-world

(Heidegger, 1927/1962) and outline the approach in Table 2.5 above, however note the use of such an approach to be largely unexplored within the tourism (and associated, and/or similar) industries. They suggest there may be value in applying this method in order to study, better understand, and explore lived experiences, such as those experienced by adventure sport participants. They make reference to Pine and Gilmore's (1999) suggestion that the emergence of the *experience economy* would signal the replacement of agrarian, industrial and service-focused economies, resulting in an increased desire for more meaningful economic offerings. Kelley and Littman (2008) bring this theory to life from a design thinking perspective, describing the *experience economy* as one where consumers wear experiences like badges of honour, providing us with the understanding that in modern society, the trend toward placing greater value on what one can achieve, rather than what one can possess, is an increasingly influential one.

Brymer and Schweitzer (2013) utilized a hermeneutic phenomenological approach in their study of the exploration of motivations related to participation in extreme sport activities. Their findings informed and influenced, to a degree, the approaches implemented during this study. The study conducted by Brymer and Schweitzer (2013) focused on athletes who participated in adventure sport activities in the search for freedom of everyday life. Taking a hermeneutic phenomenological approach allowed Brymer and Schweitzer's study to utilise and make sense of lived experiences, and to interpret meaning from the language, individual practice and experiences of the extreme sport participant, contributing to existing knowledge using wholly qualitative research methods.

When taking a hermeneutic phenomenological approach, Heidegger (1927/1962) outlines that for the researcher to fully understand and make sense of these experiences, they should be encouraged to engage themselves in the same activities of those that the research subjects participate in. Smith, Flowers and Larkin (2009) suggest it is imperative that the researcher engages in a rigorous and iterative process of explication. It is this process of immersion that allows for the deep understanding of the lived experience that the researcher may interpret and make sense of (Heidegger, 1927/1962). Taking a hermeneutic approach has, within this study, allowed the researcher to gain increased understanding of the meanings behind the experiences which can come from being an adventure sport participant. By doing this, a deeper understanding was provided, not only of the experience itself, but also of the traditions, heritage, history, and social implications that are also a significant part of being an adventure sport participant.

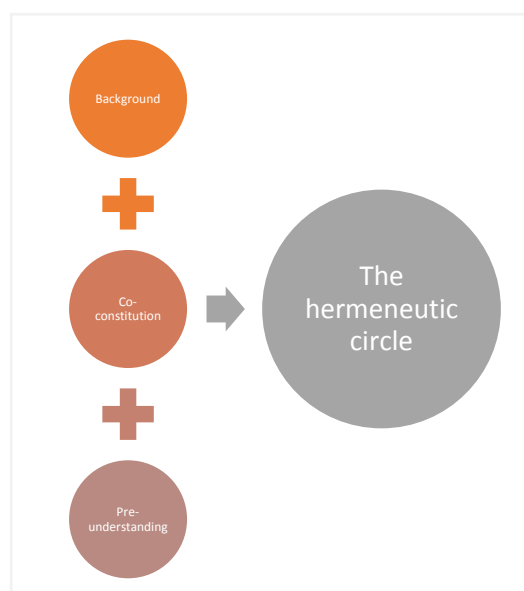


Figure 2.2: The hermeneutic circle.

The hermeneutic phenomenological approach (see Figure 2.2) is particularly appropriate when attempting to assemble a phenomenological account of other people’s lived experiences. This is true especially when the experience is being studied for the first time, when a particular topic requires a fresh perspective, or when the experience is difficult to quantify (Cohen, Kahn & Steeves, 2000).

Table 2.6: Heideggerian Phenomenology: Source: Adapted from Pernecky and Jamal (2010, p.1065).

Heideggerian Phenomenology
<ul style="list-style-type: none"> • Focus on existential relations and experience • What does it mean to be a person (climber, skier, mountaineer)? • <i>Da-sein</i> – being there, being-in-the-world • What is shared in culture, history, practice, language • Interpreters participate in making data • Establish own criteria for trustworthiness of research • The hermeneutic circle – background, co-constitution, pre-understanding

2.4.2 Heuristic Inquiry

The process of Heuristic inquiry was introduced by Moustakas when he was searching for a word that would accurately describe the process of exploring experiences, uncovering methods, and procedures, thus prompting further investigation and analysis (Moustakas, 1990). Coming from the Greek *heuriskein* – meaning to find or discover, the word Heuristic refers to the process or processes implemented by the researcher which require oneself to become a part of the research process itself in a creative, self-aware manner that permits an increase in genuine and useful knowledge (Moustakas, 1990).

Moustakas, when developing the Heuristic approach as a research method, took influence from Maslow's (1954, 1966, 1970) research on self-actualisation, and Jourard's work (1968, 1971) relating to self-disclosures (Moustakas, 1990). Other disciplines which contributed to the Heuristic approach, although perhaps not as pointedly as the aforementioned, included personal knowledge, dialogue, truth, individuality, rituals and relationships. Moustakas also discusses, to a lesser extent, the significant value, particularly in terms of providing a richer and more in-depth understanding of an issue or topic of interest, that is brought to the method when an awareness of the self (confidence, doubt, sensitivity, and identity), and connections to nature, dreams, teaching, and relationships exists.

For a researcher to apply a Heuristic approach within a study, the first consideration is the issue, problem, or question to be answered, and this is normally a question of great personal relevance or personal interest. The researcher should feel such a genuine attachment to the line of inquiry that they '*focus on it with unwavering attention and interest*' (Moustakas, 1990, p. 11).

Unlike the Hermeneutic approach, Heuristics makes use of a wider range of data collections including transcripts, personal notes, photographs, maps, images etc., and effectively set out to create a narrative that interprets qualities, meanings, and reasoning for experiences that are unique to the researcher and those who are involved in the research process. Heuristics allows the researcher great freedom to explore and to delve deeply into the subject of inquiry, allowing for insights to emerge

that may be refreshing, innovative, and previously unknown or realised (Moustakas, 1990).

Although the process is very much autobiographical, and, as was in the case of this study, auto-ethnographic, the line of enquiry relates equally to a matter of social significance and importance to the community being studied. Deep immersion is required by researchers in order to implement a Heuristic approach within their study. Therefore, there is a requirement for the researcher to be wholly passionate, disciplined, committed, and to retain intense focus until the research question has been answered (Moustakas, 1990). Similar to the Hermeneutic approach this level of immersion and commitment will not be possible, or suitable, for all researchers to undertake. For example, the time constraints of a study may not align with the method, or other researchers may not be willing to engage with the study to the same degree.

In his book, *Anatomy of Reality* (1983), Salks describes how taking a Heuristic approach to understand human conditions proved a valuable tool within his scientific studies, and how, as a professional scientist, he implemented visualisation techniques:

“...I would picture myself as a virus, or as a cancer cell, for example, and try to sense what it would be like to be either. I would also imagine myself as the immune system, and I would try to reconstruct what I would do as an immune system engaged in combating a virus or cancer cell...Before long, this internal dialogue became second nature to me; I found that my mind worked this way all the time.” (Salks, 1983, p. 7)

Similarly, in taking a Heuristic approach, it is relevant to make use of feelings, experiences, self-dialogues, awareness and understandings to influence the line of inquiry, whilst at the same time being alert, intuitive, and critical toward findings that emerge (Moustakas, 1990). The process can be exhausting and overwhelming for the researcher, however, in defying traditional and conventional approaches, outcomes which emerge from Heuristic studies are often deep and extensive. Maslow (1966, p. 45-46) emphasises that:

“...there is no substitute for experience, none at all. All the other paraphernalia of communication and of knowledge – words, labels, concepts, symbols, theories, formulas, sciences – all are useful only because people already knew them experientially.”

The Heuristic research process can be broken down into six phases:

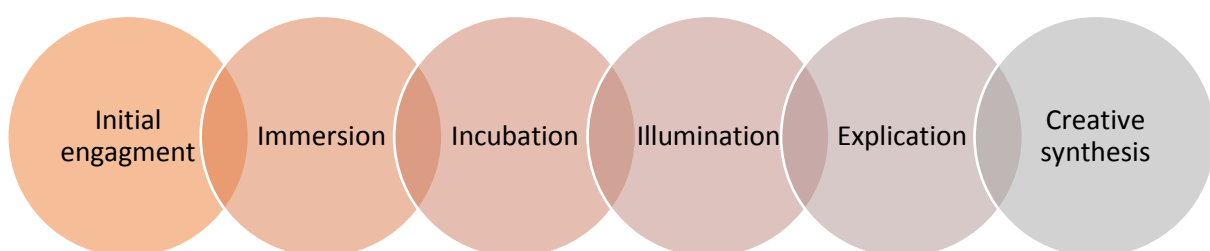


Figure 2.3: The six phases implemented during a Heuristic inquiry. Adapted from: Moustakas (1990).

The six phases were implemented during this study in the following ways:

Initial engagement: the phase included surveying the literature and conducting a desk study to develop a broad-scope understating of interesting and emerging topics. There was also an element of exploring topics that were identified as being of personal interest to the researcher. The researcher was already an active adventure sport participant, however, had not considered using her own experiences as a part of the study until the opportunity actually presented itself.

Immersion: the phase was, on occasion, intense and time consuming, requiring the researcher to be actively engaged, and involved in participating in adventure sport activities. This engagement was at varying levels (of skills), and within different, and at times challenging, environments (e.g. mountainous terrain, in winter conditions, etc.), all the while, focusing on data collection and constantly considering the appropriateness of the collected data to the study, as well as considering how the data would be used within the study.

Incubation: the phase was implemented sporadically during the course of the study. This permitted the researcher periods of time to be removed from data collection, which at times, was physically and mentally demanding. It would not have been possible for the researcher to collect data on a continuous basis for the complete planned duration of the study. During these phases of incubation the researcher contemplated the data that had already been collected and established, firstly the relevance to the study, how it could be used, and how it could be used to inform the

subsequent phases of data collection. Since there was a degree of iteration applied to planning and implementing each of the data collection methods, there was a constant awareness of the relevance of the data being collected, in that data were not being collected simply to answer a question; they were also being collected with the intention of being used to shape and direct the study as a whole.

Illumination: when this phase occurred the researcher experienced what can be described as a breakthrough. This quite often happened during periods of being completely removed from the study, for example, while socialising with family and friends, and required quick, almost immediate, action in order for the illumination to be accurately recorded and acted upon appropriately. These occurrences presented themselves as critical points of the study as a whole, and effectively assisted in directing the next phase(s) of the study toward completion.

Explication: during the explication phase collected data were considered alongside those recordings made during periods of illumination. During these phases the researcher was able to establish the relevance of the data that had been collected and how the data sets could be used to inform the study. It was during these phases of explication that definite plans could be established in order to implement further and necessary data collection. The explication phase allowed the researcher to make sense of the data, and information (i.e. findings and themes) of importance to the study to emerge.

Creative synthesis: because of the interests and professional background of the researcher (as a designer) this was, to a degree, a study that looked to use, or at least consider how to use, design to solve a problem, it is fair to say that some degree of creative thinking was applied throughout the study. That is not to say that the study was approached as a 'design project', but there was an underlying, and intrinsic, awareness of design, developed by the researcher through years of experience – an almost natural response, rather than considering 'how' design (and creative synthesis) could be applied. However, once the data collection and analysis were completed, it was possible to use the findings to consider how design thinking could be applied to the project, and could be used to suggest a solution that could be used to address those themes which had been identified during the study.

Table 2.7 below, describes the six phases of Heuristic inquiry as outlined by Moustakas (1990).

Table 2.7: Six phases of a Heuristic research study: Source: Adapted from Moustakas (1990, p.27-32).

Six phases of a Heuristic research study		
1.	Initial engagement	The researcher establishes a line of inquiry that is normally of great personal interest, and one they feel passionate about. At this stage the topic is explored and a question is formed. During this phase, the researcher uses their own experience and knowledge to inform, and direct the study. The context of the study begins to take shape.
2.	Immersion	Once the question has been established, the researcher moves on to the immersion phase, where they become intimate with the line of inquiry formed during the initial engagement phase. During this phase raw data that may inform the study are collected on the basis that virtually anything connected with the question may be of relevance – people, places, events, environmental condition, meetings, articles, photographs, film – all provide potential to increase an understanding of the phenomenon under study.
3.	Incubation	Following an intense period of immersion, the researcher will remove themselves from the process, and detach from the line of inquiry. During this phase, the researcher allows the data absorbed and collected to incubate and clarify. It is during this phase that much of the creative processes and creative thinking occurs.
4.	Illumination	This phase occurs naturally, like a breakthrough, however, generally occurs during a period of reflection, and can occur in the form of a completely new discovery in the form of something that was not originally factored into the initial line of inquiry. During the illumination phase elements that have perhaps been missed during the early stages of the study can emerge.
5.	Explication	Once a breakthrough has occurred, the next phase begins to make sense of the various layers which have emerged following data collection – with a focus on the identification of unique and distinctive facets of importance. The explication phase can, at times, be a very inward process when attempting to make sense and meaning of the experience(s) which have been studied.
6.	Creative synthesis	The final phase may only be entered once the researcher is completely familiar with all themes, and components of, which have emerged, and has moved beyond any constraints and/or confinements attached to the data. An expression, normally in a creative format, related to the essence of the experience which was studied comes to form at this point.

2.5 Perceptions and Characteristics of Adventure Sport Participants

Exactly who an adventure sport participant is, and their motivations for participating in adventure sport activities, has been a topic of great interest for many researchers (Bennett et al., 2002; Puchan, 2004; Greenwood and Yeoman, 2007; Llewellyn and Sanchez, 2008; Holland-Smith and Olivier, 2013). Likewise, popular media outlets, such as online sources of information and magazines, demonstrate an equal interest in adventure sport participants. Much has been cited on the topic, and the perceptions of adventure sport participants that have evolved has been largely attributed to those imagery and articles regularly appearing in the mainstream media that communicates an image of adrenaline-junkie, risky, thrill-seeking young, white, affluent men who put themselves in positions of danger, for the fun of it (Dickson and Dolnicar, 2004).

One factor that may have contributed to adventure sport participants being perceived in the ways discussed above is the specific group samples that have been used in previous studies exploring the topic. Llewellyn and Sanchez (2008) found that the majority of studies conducted previously within this subject area were usually based on samples taken from a limited range of ages (often undergraduate students), and in some cases they found the studies to have omitted descriptive statistics, and what participants thought or felt during specific events. Llewellyn and Sanchez's (2008) study focused on differences, specifically self-efficacy and impulsivity, and risk taking behaviour within the rock climbing community. One objective of their study was to challenge the perception that all risk taking populations are homogenous. The study

found that, although some rock climbers did indicate taking risks, this was intended to challenge themselves, and generally occurred when they considered themselves to be prepared to actually take these risks. Additionally, the study suggested that homogenous beliefs about risk taking behaviour should not be exclusively assumed or directed toward this community, because risk taking behaviour can be observed in any domains where there is an element of sensation-seeking.

Holland-Smith and Olivier (2013) make use of their own personal experiences as rock climbers, and discuss an insider perspective that offers an alternative take on the perceptions of adventure sport participants in Scotland. They suggest that

“The concept of being extreme is associated with branding and co-modification of associated activities such as climbing. This process, it has been argued, has influenced risk-taking behaviours and attitudes. A specific commercial representation that has been identified with extreme sports is that of the ‘adrenaline junkie’. The media is influential in constructing our understandings and interpretations of risk-taking in society and in specific domains such as climbing and mountaineering, and media representations of sport have become an important research field.” (Holland-Smith and Olivier, 2013, p. 1091)

However, Holland-Smith and Olivier express an appreciation of research that has led to our understanding of how an adventure sport participant constructs an identity that forms part of a lifestyle – whereby there is an interconnecting of careers, families, and relationships. This helps us in forming, and realising a different perspective that

illustrates adventure sport participation to be more than taking part in an activity, or doing so for sensation-seeking reasons. They suggest that being an adventure sport participant is not, as mainstream media might lead us to believe, about risk-taking and adrenaline-seeking, but rather about being a member of a community concerned with being part of and sharing a 'deep immersion' of activities they love. Instead of stereotypically viewing themselves in the same way as that which is generally portrayed by mainstream media (i.e. as adrenaline-junkies), the adventure sport participants who took part in the study indicated that they considered themselves to be rational individuals, possessing expert-level risk-management skills (Holland-Smith and Olivier, 2013).

West and Allin (2010) also discuss the importance, specifically within the rock climbing community, of being in possession of the necessary skills to be able to accurately assess risks associated with participating in rock climbing activities. They present this ability as being an important indicator of a rock climber's overall competence, and therefore, like Holland-Smith and Olivier (2013), suggest that a drive for participating in adventure sport activities is not risk-taking, as we are commonly led, or perhaps even encouraged, to believe. Offering a similar opinion, Llewellyn and Sanchez (2008) highlight the need to be in control when participating in adventure sport activities, and the need to possess the necessary skills that allow the participant to accurately assess and manage risk (cited from Fyffe and Peter, 1997). They make reference to the high level of risk that can be associated with adventure sport participation. However, they note the demands associated with participating in these activities (e.g. skill, strength, and fitness), and the additional requirement to be aware of, and in possession of, the appropriate equipment (e.g. ropes, harness, and rock nuts for rock climbing; touring

skis, skins, and ski crampons for ski mountaineering). This is in addition to completion of the required training, that allows one to participate safely, and to therefore be able to appropriately manage the risks involved (Llewellyn and Sanchez, 2008).

Holland-Smith and Olivier (2013) discuss in their study that professional rock climbers in Scotland regularly experienced commercial pressures, for example, in the way that they are encouraged to record and document their activities, which have caused an impact on the approach they take toward participating in their sport. As a result, those rock climbers who contributed to the study indicated that they found themselves to be increasingly taking risks, where they had not done so before, while participating, in order to meet the needs of their sponsors, and mainstream media. This lean toward more risky behaviour could be attributed to increased market demand for examples of participating in adventure sport activities that is compelling, aspirational, and desirable. For example, the demand from online social media for images, films, documentaries, and stories, related to participating in adventure sport activities, provided in a fast-paced and immediate timescale, has gained significant momentum. This trend demonstrates no sign of changing in the foreseeable future, in fact, predictions would suggest that it will only increase (Qualman, 2012).

Another factor that may influence pressures experienced by adventure sport participants, particularly those who rely on an income from sponsors and mainstream media exposure as a main source of income, could be as a result of those adventure sport participants who are encouraged, by brands and companies from within the industry, to record and document their own adventure sport activities from a more

recreational perspective. These more recreational participants are requested, by the brands and companies, to upload photos, blogs, videos, reviews, etc., about their own recent experiences, and to share this with the brand's online community (generally referred to as 'followers' of the brand/company/organization). The request could perhaps come via a direct communication to the participant, for example, a message sent through an online social media channel, or the brand/company may post an 'advertisement' looking for submissions or applications from participants, generally to meet an outlined brief; for example, they may be looking for an image of someone wearing their clothing brand while participating in an adventure sport activity. In return for providing this contribution participants may receive some sort of return, for example, free kit or clothing. However, quite often, and this appears to be the most likely outcome, any contribution is provided for the participant's own personal satisfaction, or a feeling of being an active member of the community. This therefore provides adventure sport brands, companies, organizations, etc. with the means they require to be able to respond to increasing consumer desire for increased exposure of adventure sport activities. The resulting outcome is that those adventure sport participants who rely upon an income (to whatever degree) from participating in adventure sport activities (i.e. professionals and sponsored participants) are being pushed, sometimes beyond their comfort zone, to provide more exciting and more enticing material that can be used by sponsors, companies, and the media etc., to communicate with those who are interested in adventure sport activities (Bennett et al., 2002).

Holland-Smith and Olivier (2013) go on to suggest that the opinion of those elite rock climbers surveyed during their study expressed a degree of derisory feeling toward

the media. These participants discussed how adventure sport participation that is represented in mainstream media coverage to be 'press manipulation'. The general opinion was that the term '*adrenaline junkie*' has been applied, by mainstream media, to adventure sport participants as a generic term, without consideration for differentiation or diversification. As a result, the group of rock climbers who participated in Holland-Smith and Olivier's study (2013) felt this perception misrepresented what being an adventure sport participant truly stood for. This opinion ties in with the opinion that adventure sport participation is not just about taking part in an activity, but that it can also be part of a lifestyle choice (Wheaton, 2005).

Additionally, Puchan (2004) reports concern among the rock climbing community that elite rock climbers are not paid appropriately for their contribution to the success of the brands they represent and are sponsored by. Puchan realises that it is this contribution to the brands and the image presented by the rock climbers themselves that seriously impacts sales. He makes the statement that "*climbers are currently undervalued*" (cited from Metcalf, 2002, p. 42-45). More generally, Puchan states that opinion (based on interviews conducted with rock climbers, kayakers, and representatives of the outdoor industry during 2003) from expert level adventure sport participants shows that just a small number of elite level adventure sport participants in the UK actually earn enough of an income from sponsorship payments to constitute a living wage level income (2004). Puchan also discusses concern that these athletes are not paid a sufficient return in respect of the contribution they have made (based on mainstream media exposure and provision of promotional content) to total sales revenue that is earned by brands and organisations that use media (images, videos, etc.) generated by these athletes.

In the ten years since Puchan's study (2004), little has changed in respect of how those adventure sport participants who rely on an income from participating in adventure sport activities are paid. Anecdotal reports from adventure sport participants echo the findings presented by Puchan (2004) and Holland-Smith and Olivier (2013), suggesting that the majority of elite and professional adventure sport participants continue to exist and live a lifestyle that would be considered frugal, and are grossly underpaid in respect of the income generated by sales and economy derived from adventure sport participation. The number of people employed by the adventure sport industry to provide a service to adventure sport participants, for example, providing activity guidance and instruction, has experienced year-on-year growth in terms of numbers of employees (Greenwood and Yeoman, 2007). This is likely in response to an increase in demand for these services (Tourism Alliance, 2015), stemming from increased participant numbers that have come since the emergence of the *experience economy*. However, those who are employed by the industry report that little has changed in terms of increased salaries and job security, and therefore how those employed by the adventure sport industry are forced to live.

Rickly-Boyd (2013) offers a different perspective and discusses rock climbing as 'lifestyle climbing', an immersive activity that represents behaviours of a sample of those rock climbing participants who live a full-time life as a rock climber. These climbers have little interest in risk, danger, or the commodified version of rock climbing that falls into the 'extreme' sport bracket (cited from Palmer, 2002; Robinson, 2008). Rather, they participate for the 'flow', "*the mental, emotional, and physical challenges of scaling the natural rock face*" (Rickly-Boyd, 2012, p. 92), and for being part of a community, although it is not explicitly discussed in this way by the climbers who

participated in Rickly-Boyd's study, however, their views have been interpreted in this way. Rickly-Boyd highlights how the intense dedication and sacrifice made by these climbers in order to sustain a life on the road in pursuit of climbing permits them to enter into a community of other such committed climbers who share the same interests and objectives. Further alluding to the notion of community is the reference to choosing to participate in such a lifestyle, and a specific adventure sport activity, in order to become more aware of the self, while at the same time participating alongside others who express a similar ethos and approach to their own life.

2.6 Considering Motivations for Being an Adventure Sport Participant

In addition to those studies exploring how adventure sport participants are received by others, literature also focuses on the motivations of adventure sport participants, and exploring their reasons for choosing adventure sport activities over other, perhaps easier to access, activities, such as road running or going to the gym. Beyond motivations, Kerr and Mackenzie (2012) indicate that research conducted thus far is limited to discussions that are, or can be, associated with sensation-seeking or arousal-seeking. Zuckerman (1979) defines sensation-seeking as a personality trait expressed in the generalized tendency to seek varied, novel, complex, and intense sensations and experiences and the willingness to take risks for the sake of such experiences. This highlights a potentially critical gap in the existing literature and the necessity to consider and increase our understanding of alternative motivations that may influence choices made by participants when approaching adventure sport activities. For example, the emergence of the *experience economy* has encouraged

an increase in the search for 'things' (i.e. experiences rather than possessions) that can provide a greater depth to the rationale and motivations behind the search for ways, to include an increased element of meaning and value that can be associated with one's actions (Pine and Gilmore, 1999; Kelley and Littman, 2008). However, there is little in existing literature that links the *experience economy* with the actual motivations for choosing to participate in adventure sport activities, with discussions limited to what activities are most popular, where participants go to take part in specific activities, how much time they spend participating, how much money they are prepared to spend, etc.

Kerr and Mackenzie (2012) discuss how the most informative of those studies which have been conducted so far to learning more about motivations for participating in adventure sport fail in terms of exploring the broader scope of motivations for participation, and explore, for example, potential health benefits, rather than experiential-related motivations. They believe this to be driven in part by the focus on the development of the Sensation Seeking Scale (cited from Zuckerman, 1971). The Sensation Seeking Scale is a psychological tool for measuring sensation seeking personality traits, such as neuroticism, anti-social behaviour and psychopathy. First developed by Zuckerman and others in 1964, it has undergone a number of iterations, and in its current format there are four sub-scales of the tool: thrill and adventure seeking, disinhibition, experience seeking, and boredom susceptibility. It has been used in other studies to better understand psychological disorders and certain human-drug interactions, which can also be related to the search for risk, thrill, escape from boredom, etc.

Kerr and Mackenzie also discuss studies which tend to favour the use of quantitative data collection methodologies over qualitative methods, and are based on a limited sample of participants, for example; a specific age group, one gender, etc. They offer the opinion that these studies may overlook or oversimplify contrasting characteristics which could exist within this topic area. In response, they designed a qualitative study that implemented a series of reversal theory research methods, including a collaborative interview method, in order to explore the experiences and narratives of established adventure sport participants relating to their motivations for choosing to participate in adventure sport activities.

Reversal theory (see Figure 2.3) is taken from the field of psychology and explores personality, motivation, and emotions – focusing on the qualities of human experiences to highlight how a person can regularly reverse between different psychological states. The states are categorised into four different ‘domains’, each with two opposing motivational domains, either positive or negative, and it is suggested that emotions reverse between these two states based on the context or situation (Apter, 1989). As an example of how this could be related to participating in an adventure sport activity, consider the ‘rules – freedom’ domain: before deciding to take up an adventure sport activity the participant may be in the ‘freedom’ state and thinking about the feelings of freedom and independence that they will experience when they actually take part in the planned activity. Then, when the participant takes part in the activity, they may reverse into the ‘rules’ state when they begin to realise how they need to know what to do before they are competent taking part in that activity.

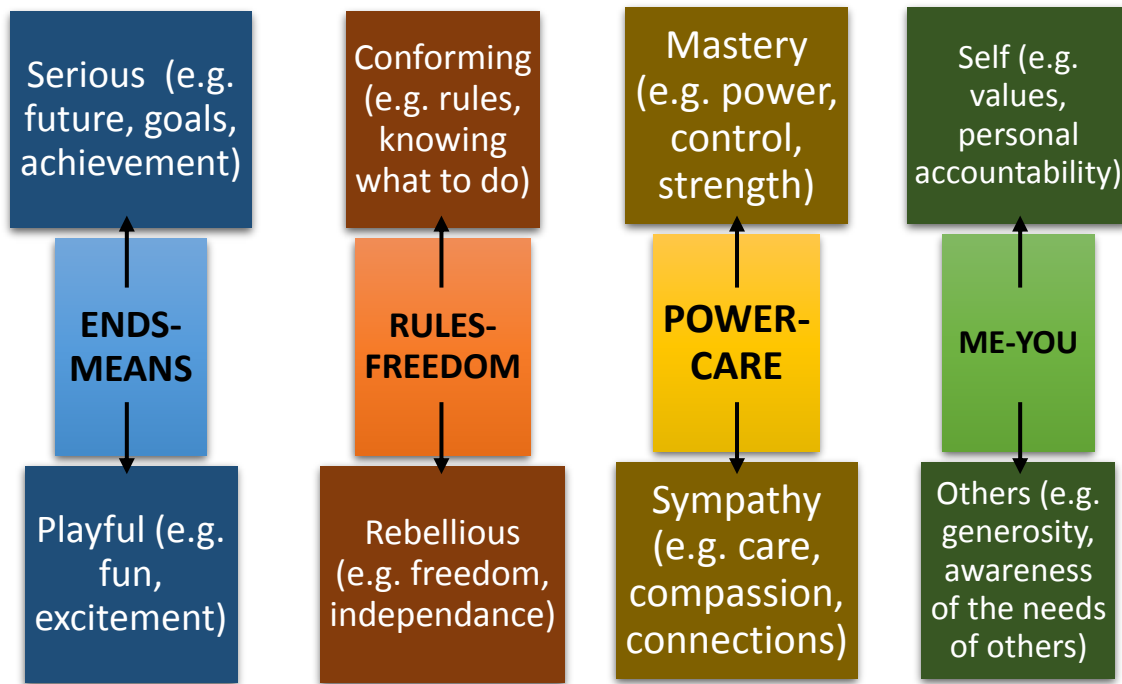


Figure 2.4: Reversal Theory Model (adapted from: Tucker, 2011).

Kerr and Mackenzie (2012) conducted their study as a four phase activity to allow them to capture deductive (e.g. specific components of an event, for example, the weather, what the participant was wearing) and inductive (e.g. experiences, descriptions of events) data:

1. Interviews
2. Open-ended questions
3. Theory testing
4. Participant review of data.

They provided participants with the opportunity to reflect on their experiences, and to transit through different states of mind in order to accurately recount how they felt at

different points of the participatory experience; for example, one participant (Jodie, 26, water sports participant) discusses her family connections to these activities, her feelings when she is preparing to participate, and the physical and mental challenges she experiences while actually being in the water and is taking part in her favourite activities. The findings from the study suggest that individual motivations for participating in adventure sport activities in the first instance require a continuation of research to better understand the associated complexities, and secondly, that motivations for participation far extend beyond seeking thrill and/or excitement - there can be multiple motivations present that may encourage the desire to participate, such as achieving personal goals, social motivations, alleviating boredom, overcoming fears, experiencing a connectedness with nature, and general enjoyment. Furthermore, specific motivations may alter over time and as expertise develops (Brymer and Schweitzer, 2013), which suggests that the decisions and motivations associated with choosing to participate in an adventure sport activity is much deeper and more complex than even the understanding that may be derived from an established, and commonly used, scale or model.

Puchan (2004) suggests that the characteristic that can be used to identify an adventure sport participant as being different from a regular, or mainstream, sport participant (e.g. football, swimming, road/tarmac running), and forms an element of the multiple motivations for choosing to become an adventure sport participant, is the added component that is provided in the form of a lifestyle factor; documented by adventure sport participants as being a part of the whole participatory experience. Of course, it could be argued that all sporting activities provide some element of a lifestyle factor. For example, playing football requires the participant to be part of a team, and

with that comes an element of social interaction, which could form a part of a lifestyle, therefore also providing the lifestyle factor. However, participating in adventure sport activities may be slightly different in that these types of activities not only form part of a lifestyle, but can also become a whole lifestyle, perhaps even becoming part of a participant's identity. Puchan (2004, p. 172) states:

“There are the views, the beautiful and wild surroundings, the sense of physical achievement when the climbers gets to the top of the hill or a route, the friendship and camaraderie between people who go climbing together.”

Puchan (2004, p. 172) also explores, and summarizes, studies conducted by Eckert (1990), Beck (1986), and Elias and Dunning (1970), who offer a collective view that participating in adventure sport activities provides an opportunity to experience a new set of challenges and demands that have been almost removed from the modern consumerist society, where everything is readily and instantly available, and where we are assured of reduced risk that is secured by comprehensive insurance cover. It could be the idea of being removed from safe, insured environments that makes adventure sport activities particularly attractive, especially to young people who are interested in becoming an adventure sport participant, perhaps even with the view to becoming an advanced or even professional level participant at some point, and who are demonstrating a trend toward favouring a lifestyle that combines a favourite pastime with a career, rather than settling for a traditional, and potentially boring, career. This further indicates that the *experience economy* and an increase in adventure sport participation are:

“...not isolated from societal developments, but can be seen as symbolic of a postmodern society where people are searching for new ways to explore their limits and escape boredom and mediocrity.” (Puchan, 2004, p. 177)

Brymer and Schweitzer (2013) suggest that motivations for participating in adventure sport activities have far evolved from the notion that participants primarily seek risk and adrenaline. They propose that consistently having to comply with social norms in terms of health and safety constraints on a daily basis is most likely the basis upon which the perception of adventure sport activities is formed, believing these activities to be grossly attached to risk and danger. Brymer and Schweitzer (2013) offer the suggestion that the prospect of freedom is the motivating factor which motivates adventure sport participants to take part in adventure sport activities. Additionally, Brymer and Schweitzer (2013) and Rickly-Boyd (2012) contribute the perspective that some adventure sport participants, particularly those who completely embrace the lifestyle, have become dissatisfied with norms, and have actively chosen to remove themselves from situations that do not make them feel comfortable or ‘at home’, in favour of embracing things of greater personal value to them, and are prepared to relinquish a comfortable life of mod cons, luxuries, and security in favour of one that satisfies a need for meaning, challenge and achievement.

Chapter 3. Methodologies

3.1 Introduction

This chapter discusses those research methodologies implemented during the study. Following an initial scoping phase, which consisted of a literature survey, discussed in Chapter 2 of this thesis, interesting themes, and approaches for exploring these, were identified. The reason a structured hypothesis was not formulated at this stage was because it was necessary to begin data collection to further explore those themes that had been identified during the literature survey. It was anticipated that once data collection activities had been commenced, and the themes further explored, it would become possible that a hypothesis or research question could be defined. Research methods were identified and selected following the literature survey, and were considered to be appropriate ways to explore and draw upon the experiences of adventure sport participants, and to better understand the adventure sport industry. Data collection was approached in a systematic and organised manner, whilst at the same time being open and fluid enough to meet the objective of exploring matters of social significance to, and within, this community.

The study looked to focus on those who have participated in adventure sport activities in Scotland. However, to better understand the industry and associated communities, to conduct comparisons, and to conduct a balanced thematic analysis, the study also took into account the experiences of adventure sport participants in other carefully selected locations outside of Scotland. Suitable locations were identified based on the criteria that provision of adventure sport activities locally contributed significantly to the local economy, or are considered to be an important local industry, for example, have

a large number of adventure sport providers, experience high numbers of visiting traffic specifically looking to take part in adventure sport activities, etc.

A mixed methods approach was designed and utilised during the study, and is specifically discussed in greater detail in Section 3.1 of this chapter. Influence was drawn from grounded theory approaches and problematization, similar to those approaches suggested by Alvesson and Sandberg (2011). Ideation and design thinking were also used to inform parts of the study, particularly when considering a solution appropriate for addressing those themes identified by the study. In the first instance, the study used qualitative methodologies. This permitted exploration of those themes which were identified during the scoping phase (literature survey) of the study. By using qualitative methodologies during the first phase of data collection, the identified themes were allowed to be either confirmed or rejected. This phase of the data collection was, in the first instance, based on an ethnographic and auto-ethnographic approach. The researcher being an active part of the adventure sport industry and associated communities became a focal point of the data collection activities, and indeed the study as a whole. The processes associated with being an active adventure sport participant were lived and experienced first-hand by the researcher. Opportunities were undertaken to experience as many facets of the industry as possible, and within the constraints of the study. This included participatory and observatory activities, which drew influence from ethnographic methods, and involved the researcher not only participating alongside other adventure sport participants, but also socialising with them and sharing accommodation and travel arrangements (i.e. car sharing). To complement, support and further enhance those findings that emerged from the auto-ethnographic and ethnographic data

collection activities, interviews and narrative enquiry interviews were conducted with established and regular adventure sport participants. The qualitative phases of data collection were conducted in an iterative manner, with a degree of overlap between them – in that the ethnographic and auto-ethnographic findings were used to both identify the need for more structured, formal interviews, as well as used to inform the content of them.

Secondly, in order to confirm those findings which emerged during the first qualitative phase of data collection, a more formally structured quantitative data collection phase was implemented. The need to do this was identified following analysis of all collected qualitative data sets. From the qualitative data sets a series of themes were identified, which is what would normally be expected when using these types of methods. However, the results produced were not considered to be sufficient to be useful in completing the study. This is not to say that the findings were not suitable to be presented as results at this stage, rather the themes required further investigation in order to be able to provide a response to those identified themes, and therefore complete the aims of the study. It was, at this stage, considered to be necessary to further explore these themes, with a wider range of adventure sport participants, in order to better understand the themes and to further refine them, so that tangible, usable results could be produced, i.e. a response/solution to the identified issues. It was accepted that the most appropriate way to do this would be to identify and implement quantitative data collection methods.

This quantitative phase of data collection was conducted in two separate stages. Firstly, a questionnaire was designed based on the findings from the qualitative phase of data collection, and distributed to a sample of twenty-five gatekeeper style participants. This group of gatekeepers was identified as being suitable for the study based on the researchers own knowledge that they possessed an existing interest in adventure sport activities, and an understanding that they had access to a large number of their own contacts to whom they could distribute the questionnaire. A link to the questionnaire was also shared on a number of forum style webpages (e.g. www.ukclimbing.com, www.singletrackworld.com). The second phase of quantitative data collection utilised the findings from the questionnaire to inform and develop a validation-style activity. The validation activity was designed in similar format to a simple YES/NO style score sheet. The validation score sheet explored themes identified earlier in the study as being of interest to adventure sport participants. A sample of twenty-five participants was selected to complete the validation activity. Participants were selected from the list of questionnaire participants who had indicated an interest in being involved with the study beyond the questionnaire phase.

Data were collected over a period of twenty-four months, using the following five qualitative and quantitative data collection methods:

1. **Ethnography and Auto-ethnography** – this qualitative method drew on the researcher’s own personal experiences, and immersion within the adventure sport community – as an observer, a participant, and a member of the community itself. Experience prior to, and during the study, informed and

influenced the auto-ethnographic reflexive process (Sands, 2002), and indeed assisted in logistical components of the study, for example, when recruiting participants to the study, and actually possessing the necessary skills to take part in specific activities. Past experience was drawn upon to influence and inform data collection activities implemented, for example, when identifying appropriate locations to conduct data collection activities, and making use of existing contacts to assist with participant recruitment. However, past experience was not included as a data set. During this phase of data collection the researcher spent periods of time with other adventure sport participants; observing them, participating with them, socialising with them, living with them, and effectively being immersed and involved to the same degree. Being so involved allowed the researcher to gain a 360-degree, complete lived experience of being an adventure sport participant, and this included developing and learning new skills and gaining more knowledge useful to the researcher as an adventure sport participant, as well as being useful and of interest to the study. Data were recorded using researcher notes, photographs, and blog entries. It was not always possible to make data recordings during the actual activity, for example, conversations occurring during a rock climbing session were not possible to be recorded verbatim (notes or audio) because it would have been dangerous to do so, or environmental conditions (e.g. wind, rain, etc.) prevented immediate recording to take place. On these occasions, notes were made as soon as possible following the event. All those participants who were involved in this phase of data collection confirmed that they were fully aware of the study and understood how the researcher intended to use any data that were collected from them. Collected data were analysed using a

thematic coding process. Due to the nature of the study, which was at times geographically dispersed, it was not necessarily always possible to conduct data collection activities at the planned date and time. It was necessary to have a constant awareness of how the collected data would be used and the relevance to the future phases of the study. Doing this permitted the researcher to consider and explore emerging themes from the collected data and to establish the most appropriate methods that would be useful in further elaborating on these themes, as well as thinking about what methods would work best with the adventure sport participants themselves.

Two further qualitative data collection methods were identified and implemented: interviews and narrative inquiry interviews (see next sections), both with adventure sport participants who possessed some degree of existing experience. The interviews and narrative inquiry interviews were intended to be conducted while the ethnographic phase continued, so there was a degree of overlap, iteration and indeed influence occurring over the course of the qualitative data collection as a whole.

2. **Interviews** - it was noted that, although some literature did discuss females as being interested in participating in adventure sport activities, and of being a group that were indicated as being of opportunity to the adventure sport industry, they were generally found to not be represented in the same way in, for example, industry reports, as male adventure sport participants were represented and discussed. Rather, females were noted to be represented by those statistics and literature sources that were used during the study as very

much a minority, non-typical participant group, and this was considered not to be reflective of some of the more qualitative, discussed research surveyed as well as those observations recorded by the researcher. However, female adventure sport participants were also being identified as an increasing participant group (Puchan, 2004; Sport England, 2015). As such, gaining a better understanding of female participants' opinions, perceptions, and experiences was considered to be an interesting line of inquiry, and was worth further exploring on a semi-exclusive basis, using interviews to do this. These interviews took the format of an off-road trail running weekend in the Lake District (Ambleside, England), with two regular, relatively experienced adventure sport participants. During a nine-month scoping phase of potential interview participants, influenced by the ethnographic study, the researcher observed a number of adventure sport participants and considered their approaches and behaviours and used these observations to refine the interview process itself, including the format, location, questions, as well as identifying the most appropriate participants. This was not an exercise in establishing a sample of adventure sport participants who would 'fit' into the study, but more focused on selecting participants who would be able to provide data that would be useful in further elaborating on and exploring those themes which were emerging. Implementing this scoping phase also significantly assisted when establishing what questions to ask; this allowed the researcher to really consider the most appropriate questions, and some of those questions identified at the earlier stages of the scoping phase were actually sufficiently answered, and therefore this allowed a richer set of questions to be formulated for the actual interviews. This approach was found to be very useful because

the researcher was able to gather valuable insights about female adventure sport participants generally, as well as being able to identify key questions that could be asked during the interviews in order to ensure collection of data that were able to provide an in-depth insight into the lived experiences of these females in relation to participating in adventure sport activities. Following a day spent trail running in the hills, interview participants were formally questioned and their responses recorded using an audio recording device, and later transcribed verbatim. The interview participants also gave consent for the researcher to collect and use any informal data (e.g. comments, conversations, photographs etc.) that emerged outside of the formal interview process and were considered to be interesting and/or useful to the study. These data were recorded using researcher notes and photographs taken by both the researcher and the participants.

3. **Narrative Inquiry interviews** – the third and final qualitative data gathering method was conducted with regular and professional adventure sport participants, focussing on kit modification, as this theme was identified during the auto-ethnographic and interview phases. Participants were recruited using a canvassing approach, and invited to discuss with the researcher, on a one-to-one basis, self-modified items of clothing, kit, or equipment which they use when they are taking part in adventure sport activities. The intention to only include regular and professional adventure sport participants was not the anticipated approach, nor was it the intention to exclusively survey either males or females. This was intentionally left open, and allowed to evolve. Similar to other studies, the participant group became weighted in favour of the males,

and those participants with more experience. The notion of kit modification was discussed on numerous occasions by almost all adventure sport participants. It is fair to say that it was mostly those adventure sport participants with some degree of experience that discussed conducting some sort of self-modification. The modification theme was observed to be something that participants were passionate about, and it was also noted that there was almost always a defined rationale for carrying out the modification itself – this was not just for pleasure or personal satisfaction (e.g. customising an item of clothing), but for practical purposes also, to make the item more usable. Using this information, the researcher designed the approach around this theme, and used it as a method to encourage narrative descriptions of not just the process implemented in order to actually carry out the modification, but to explore the individual rationales, and the impact the modification had on the participatory experience(s) as a whole. In terms of those participants who took part in this phase of data collection, it could be that the theme was of more interest to those with a higher level of skill and experience. Although this was observed to be exclusively the case during the ethnographic and auto-ethnographic phase, it could be that those participants with less experience did not perceive the modification they had actioned to be of sufficient merit to discuss, or perhaps they did not have the confidence to have a conversation about it. During the narrative inquiry interviews, emphasis was placed on allowing an open dialogue to emerge on this very subject, one that was not dictated by pre-defined questions, or a structured interviewing process. Participants were encouraged to bring the self-modified item(s) (or to provide a photograph(s)) they wished to discuss during the narrative inquiry. It was anticipated this would provide a comfortable starting

point for the dialogue, and that actually handling the item may be useful in prompting memories associated with the modification. The narrative inquiry interviews were recorded using an audio recording device. The recordings were later transcribed verbatim. Researcher notes were also made during and following the interviews, and photographs were taken, where it was possible to do so, of the self-modified items.

Data collected during the qualitative methods were analysed using a process of thematic coding. Data from each method were analysed on an individual basis as well as collectively – this was to ensure there was no loss of data by simply analysing all the qualitative data as one complete set. This also allowed the researcher to begin to identify common themes – occurring individually and collectively. By doing this it becomes possible to establish a series of themes that were commonly of interest to adventure sport participants, across a range of skill levels, and this allowed the researcher to identify the need to further explore and validate these. A second round of qualitative data collection was considered, using either the same methods as those which had already been implemented, or using different methods. However, the researcher, following further analysis of the qualitative data, felt it would be more useful, and indeed conclusive to consider the implementation of a series of quantitative data collection methods that are recognised as being appropriate for validating thematic findings.

4. **Questionnaire** – based on those findings that emerged following the analysis of data collected during the qualitative phase of data collection described earlier

(ethnographic and auto-ethnographic study, interviews and narrative inquiry interviews) a questionnaire was developed for gathering quantitative data on participant perceptions. Specifically, the questionnaire looked to further explore those themes that had emerged following the analysis of qualitative data in order to elaborate on them and to establish which may be interesting and/or be useful to adventure sport participants. To do this the themes were translated into a series of user needs which were drafted, refined and used to populate an online questionnaire (see Table 3.1) which requested participants to provide a score (1 = very low to 5 = very high) indicating how important they considered each translated theme, referred to as components for the purposes of the questionnaire. Participants were recruited using gatekeepers (existing contacts and adventure sport participants who were willing to share information about the questionnaire), by contacting others who had been involved earlier in the study, and using media channels, such as social media and online blogs, websites etc. It was anticipated that the results from the questionnaire would be useful in identifying the importance of each user need, and using this information to refine and translate the user needs into a defined series of user requirements. The intention then was to use the series of user requirements to inform the formulation of a validation activity that could be further distil the identified themes and components. Participants for this method were not personally identified or scoped using similar approaches that had been implemented during the qualitative phase of data collection. Additionally, the researcher did not spend any time with any of those who participated in questionnaire. This is also true for the validation activity. As such, the quantitative phase of data collection did not look to gather any further data

relating to personal experiences of adventure sport participants, but rather looked to confirm that what had been identified during the qualitative phase had been correctly done so, and accurately reflected true, lived experiences of adventure sport participants and was successful in the identification of issues, changes, and themes of relevance to the adventure sport industry, and associated communities. Questionnaire participants were asked to indicate their interest in participating in further stages of the study (i.e. the planned validation). The reason for collecting this information was in order to develop a data base of adventure sport participants with an ongoing interest in the study, and to request they validate the findings from the questionnaire.

5. **Validation** –based on those findings that emerged following analysis of data collected during the questionnaire activity, a validation style activity was formulated. The user needs that were identified as being interesting to adventure sport participants were extracted from the analysed questionnaire data and carefully refined before being presented in the format of a YES/NO score sheet (see Table 3.2). The reason for needing to conduct a phase of refinement was to ensure that the user needs were translated in such a way that they were able to be formulated as a series of user requirements, i.e., not just a list of what participants might need (user needs), but to be able to explore how these needs might be met (user requirements). Doing this permits the development of those issues, changes, and themes, etc. that are identified to become closer to be realised as a response or solution that could be useful for those for whom intended. Taking this approach is also very useful in being able to design an end product in a manner that is considered to be acceptable to the

intended end-user, since they have been involved at all stages of development, and their feedback has been used to refine, define, and ultimately design the end product, regardless of what physical format it may eventually take. Those participants who contributed to the questionnaire and indicated being interested in contributing to future stages of the study were then contacted and asked to complete the online validation score sheet by providing a yes or no response to indicate if these items (user requirements) were interesting and/or useful to them. Accessing the same sample of participants was intentional because it was hoped that during this phase the translation of user needs into user requirements could be confirmed as being accurate and representative of what is required by adventure sport participants. To further develop the response beyond this study, it is anticipated that a further, wider (naïve) sample of participants would be recruited, as is the normal procedure when conducting a user validation process. From a logistical perspective, the remaining timeframe available to the study was taken into consideration when designing this particular phase of data collection, and the time required to fully complete it was considered, and the remaining time available did, in part, contribute to the decision to access the same sample of participants as had been used during the questionnaire method. Following analysis of data collected during the validation activity, findings were then reviewed alongside all other collected data (qualitative and quantitative), and collated to inform the design of a framework for a tool which may be useful to adventure sport participants and could be useful in providing a response to the issues (i.e. themes) that were identified during the study.

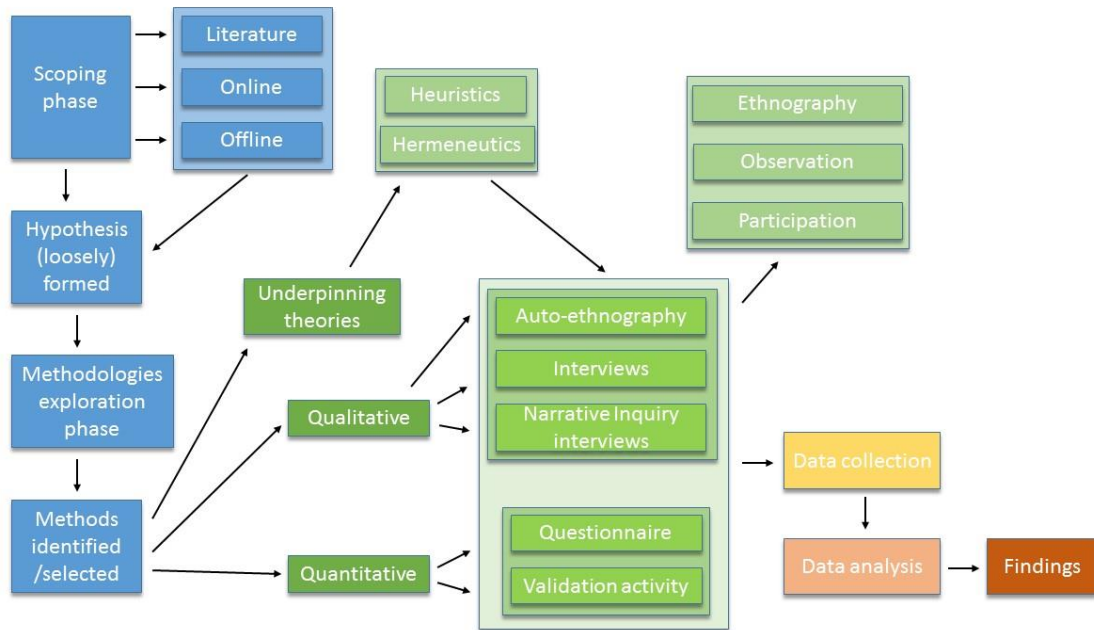


Figure 3.1: Methodologies selection and data collection application.

3.2 Underpinning Rationale for Method Selection

Following the initial scoping phase, which involved conducting a literature search and review, and a consultation and evaluation of on and offline sources of relevant information, a series of themes occurring within the area of adventure sport were identified. Using a process of problematization, where a problem is identified to formulate a research question, the researcher established potential for research activity to be conducted to develop a better understanding of the identified themes (Alvesson and Sandberg, 2011).

Once the interesting themes were defined, the process of identifying and establishing the most appropriate research methodologies suitable for exploring the themes was commenced. Initially, the study tended toward the use of a mix of research methodologies. This approach is typical of a study which looks to explore topics of a

similar nature to those outlined by, and of interest to, this study (Sands, 1999). It was anticipated that, when implemented, these methods would produce data sets from which results and findings that would be presented as per that of a traditional mixed-methods approach study. However, further exploration of these types of methods, which although generally defined and presented as mixed, tend to focus more on the production of quantitative data sets. This indicated that there may be potential to produce differing sets of data that could potentially contradict each other, and/or would not produce tangible and useable outcomes within the timeframe allocated for the study, therefore resulting in an inefficient process that does not produce sufficient and/or appropriate results for data triangulation. Additionally, the literature had indicated that generating quantitative data sets might not be appropriate for use within the target community when attempting to identify solutions to emergent issues and problems (Kerr and Mackenzie, 2012).

This potential limitation was of particular interest because typical approaches exploring the subject of adventure sport were discussed by Pernecky and Jamal (2010), and Jennings (2001). They indicated that studies in this field tend to shy away from the use of qualitative methods, in favour of statistical data collection and exploring, for example, the degree to which participant numbers have increased and how many providers there are in a particular area, etc. This raised the question of the possibility to conduct a study that uses only qualitative approaches, and to test the opportunities to produce new knowledge using these types of generally less-favoured methods.

During the study it was important, to the researcher, to maintain a degree of design awareness that might be useful to the study, and retain a degree of adaptability, which

allowed an understanding of critical factors occurring within the adventure sport industry to emerge from the data collected. Implementing quantitative data collection methods during the early stages of the study presented potential to produce findings that were too closed in nature, and too closely reflecting those already presented by other studies. Alternatively, in using qualitative data collection methods the potential to allow the process of problematization to occur was encouraged.

Since one focus of the study looked to develop a better understanding of the motivations and experiences of those established within a particular community, as well as those aspiring to become a part of that community, the conclusion was reached that quantitative methods may not be the most appropriate methodology for this particular study. Experiences cannot always be accurately quantified, for instance, results may differ according to the mood, time of day, location, topic of conversation, questions posed, etc. Additionally, from the researcher's own perspective and experience of being an adventure sport participant, it was appreciated that these differences throughout the day could, depending on the activity, environment, weather conditions, etc., be exaggerated or reduced, which may present an even greater potential to lessen the validity of the quantitative data sets.

This led to the assertion that research activity of a quantitative nature may not provide the most accurate and/or influential data sets. It was believed that implementing qualitative research methodologies within this study may result in the return of a richer, more genuine collection of information, than that provided by statistical gathering exercises alone, such as a survey or questionnaire. Kerr and Mackenzie (2012)

believe a qualitative approach to be appropriate when exploring motivations for why individuals might chose to participate in adventure sport activities:

“Qualitative methods often allow the motivation of individuals engaging in adventure sports to be investigated in greater depth than quantitative studies”
(2012, p. 650).

However, taking a qualitative approach does not align with traditional research methodologies within this field; Pernecky and Jamal (2010) suggest that publications generally avoid phenomenological discussion (Ritchie, Burns and Palmer, 2005; Veal, 1992) and approaches (Jennings, 2001). One possible reason for this is the lack of clear methodical guidance on the use of such approaches (Obenour, 2004), especially within research focusing on the *experience economy* and similar. A second reason, offered by Pernecky and Jamal (2010), is that phenomenological research methods can be highly complex and time consuming in terms of data gathering and analysis, requiring the researcher to be wholly active and alert for the duration of the process while also possessing an in-depth knowledge and understanding of the philosophical underpinnings of the chosen approach. Jennings (2001) notes there has been an increase in, and emphasis on the emerging use of, qualitative approaches, making specific reference to the use of such within tourism studies - a field that has traditionally favoured the use of scientific and quantitative methods. However, it can be presumed that these qualitative approaches could also be applied within studies focusing on the *experience economy* and similar, including the adventure sport industry and associated communities. According to Heidegger (1927/1962), humans are greatly concerned with their existence, and seek ways of enhancing this existence. It is this

understanding that Pernecky and Jamal (2010) believe occurs when one finds a method of interpreting and understanding relationships with things and attaches them to cultural, social and historical meanings.

Initially, data collection activities took a macro view of the communities. Early observations concluded that underlying barriers may have been experienced by novice and new adventure sport participants when making efforts to access adventure sport activities. As such, the focus was not on learning the processes implemented by these participants to allow them to become established adventure sport participants, such as learning the necessary skills, but rather on taking a phenomenological perspective - interpreting, understanding, and reflecting on their experiences. One area of interest to the study was to consider the hidden or unspoken meaning(s) behind the actions of adventure sport participants and the decisions that influence and form individual journeys, thinking about if or how these actions can have potential to form a part of the experience itself. Particular interest was directed toward establishing how to use these 'meanings' to contribute new understanding to existing literature and build on our current knowledge and understanding of the adventure sport industry, and associated communities. Conducting this aspect of the study was, on occasion, influenced by personal factors (both of the researcher and others) that may have occurred as a result of participating in adventure sport activities, for example, tiredness, inability to form a strong enough connection with another participant, time constraints etc., and also due to environmental factors, such as staying safe, poor weather conditions, etc. Additionally, it was not always appropriate to consider every single detail. An event or occurrence may have been too personal, discussing an

event or occurrence may have revealed a participant's identity, the event or occurrence just wasn't relevant, etc.

The desire to form an understanding of the experiential narratives and experiences which emerged during the qualitative data collection phase promoted the need to identify and implement underpinning theories that could contribute to, and inform, the analysis of collected data. Heuristics and hermeneutics, discussed in greater detail in Section 3.1 of this chapter, were identified as the most appropriate theories to do this, and indeed influenced the outcome of the study.

Ethnographic methods were implemented to source and collect qualitative data sets, these included: interviews, narrative inquiry interviews, and an auto-ethnographic study. First-hand accounts and observations were used to attempt to better understand the experiences of adventure sport participants. This was followed by a process of continuous thematic analysis, rooted in grounded theory, to interpret recurring themes that could give indication and/or provide clues as to what might be of interest to the adventure sport industry, and associated communities, for which there was no current provision. The methods implemented were identified as being the most appropriate in order to increase understanding of the experiences of adventure sport participants in Scotland. Since it is accepted that ethnographic research often takes a fluid approach, this study, to a degree, also evolved holistically. It was taking this almost-organic approach that allowed discoveries to evolve and to dictate some lines of inquiry (Sands, 2002).

Flood (2010, p. 11) describes the process of data gathering using the phenomenological interviewing method as follows:

“In phenomenological research, the interview is reflective (Munhall and Oiler Boyd, 1993) rather than observational as seen in qualitative research. The interview is the main method of data collection: participants’ descriptions can be explored, illuminated and probed (Kvale, 1996) using reflection, clarification, requests for examples and descriptions, and listening techniques (Jasper, 1994). While the researcher may start with only a general plan about the direction the conversation will take, Seidman (1991) suggests that it will pass through three structures stages:

- *Establishing the context of the interviewee’s experience.*
- *The construction of the experience.*
- *Reflection on the meaning it holds.”*

However, following completion of the analysis of data collected during the qualitative phase, it became clear, that even though the data sets were rich (in excess of two hundred unique descriptive codes) the findings were not totally conclusive, but rather had allowed a series of themes of significance to the line of inquiry to emerge. These themes assisted in the identification of a set of problems which could be refined and defined to provide a platform and direction for further research. Although there was an abundance of other themes that could be extracted from the analysis, these alternative themes were not considered to be of sufficient merit, and did not hold enough weight to fully meet the requirements of this study. Since the data sets from the qualitative phase did not produce conclusive results, the decision was taken to

implement another phase of data collection. This provided the opportunity to further explore those themes (i.e. the problems) which were identified as being of significance to the study. Those themes which demonstrated potential for further exploration but were not considered to be in alignment with the interests of the study were extracted from the analysis and may be used to direct future studies. For example activity specific sub-communities of the adventure sport community, characteristics (profiles) of different members of the adventure sport community, and sub-communities, and barriers to taking part in adventure sport activities that are caused by existing commitments (for example, family and social), and the impact this may have on individual participants, especially in respect of them being permitted to progress in terms of skill and experience related to adventure sport participation.

To verify the correctness of identified themes and before conducting any further data collection, the findings were re-analysed and a further literature survey was conducted. At this stage, the decision, taken very early in the study, to attempt to test how feasible it would be to conducting a study interested in experiences and adventure sport participation by using only qualitative methods was very carefully reassessed. After consideration of the findings from the qualitative data, the decision was taken to introduce appropriate quantitative methods. As a result, the research model that was originally implemented during the study was altered, and the study therefore became a mix-methods study. This was considered to be the most appropriate approach. Although it was appreciated that the qualitative phase of data collection had permitted significant themes to emerge, there was no evidence emerging that was really providing a conclusive response to the study. It could be argued that the findings from the qualitative phase could have been written up and presented as a series of perfectly

acceptable findings, however the researcher, taking into consideration her design background, felt it would be more appropriate to the study to explore the potential to provide a response to the those identified themes and to implement further data collection activities in order to complete the study. It was of concern that another round of qualitative data collection activities may result in the same outcome i.e. the production of a series of significant themes. And although these could have been interesting, and indeed informative to the study, there was also potential that only similar themes may have been produced, and when considered alongside the timeframe allocated to completing the study, it was understood that implementing a further round of qualitative data collection and analysis may cause significant impact to the study being completed within the allocated timeframe. Therefore, it was not considered appropriate to conduct a second round of data collection using the same, or indeed alternative, qualitative methods. This decision was not anticipated to cause any negative impact in relation to the objectives of the study.

A second round of efforts to identify appropriate data collection methods for the next planned phase of research activity was conducted. The purpose of this was to identify the most suitable quantitative methods which could elaborate on and validate the themes which had emerged following analysis of the data collected via the qualitative methods. A period of time was spent exploring a range of quantitative methods, and a number of test/pilot phases were conducted to gauge efficacy, for example, on and offline questionnaires, street surveys etc. Following this process, two quantitative methods were identified as being suitable, and appropriate for the line of inquiry, these were:

- i. questionnaire
- ii. validation activity.

These two data collection methods were specifically selected because, firstly; it was anticipated that they would fit nicely into the remaining timeframe allocated to the study, and secondly; could be used to appropriately complete the research process, in that they could produce results that would allow a conclusion to be formulated that also included the findings (i.e. the themes/problems) from the qualitative phase of data collection.

3.2.1 Application of Methods

3.2.1.1 Ethnography and Auto-Ethnography

Auto-ethnography can be defined as a form of qualitative research that makes use of and incorporates reflexive self-observations that require the researcher to be immersed within the studied environment as an active and engaged participant, allowing them to communicate their findings and experiences as a critical element of the study (Anderson and Austin, 2011). In short, auto-ethnography is a research method that combines characteristics of both ethnography and biography (Pace, 2012).

As a research method, some researchers implement auto-ethnography in order to explore personal experiences and their own interactions within a society. It is this exploration that allows for the development of a deeper, and in some cases, new,

understanding of that society (Marshall and Rossman, 2014). Auto-ethnography has been gaining momentum within the creative sectors (Pace, 2012) and also lends itself very succinctly to studies of leisure activities (Anderson and Austin, 2011) and similar. Taking an auto-ethnographic approach toward data collection activity allows the researcher a greater deal of control over the research (Muncey, 2005), thus providing the researcher with the ability to adapt and modify the research activities promptly, in a fluid, holistic manner, as necessary (Marshall and Rossman, 2014). Taking this approach allows a degree of analysis to occur on a continuous basis, however it is necessary that the researcher be prepared for any changes, and be ready, willing and adaptable (Muncey, 2005). The approach is not suitable for all types of researchers, nor does it fit with all disciplines or subject areas, for example, when a study is purely desk based, or when a researcher is simply looking to verify a theory using only quantitative evidence.

This research method was considered to fit well with a number of elements of this study, for example, exploring lived experiences and narratives of adventure sport participants, as well as the general nature of the adventure sport industry and associated communities – who can be notoriously difficult to commit to a formal meeting (Rickly-Boyd, 2012, cited from D’Andrea, 2006), for various reasons (including the lure of a fair weather day, when individuals will be outside participating in their chosen activity). This limitation was encountered and experienced first-hand numerous times throughout the data collection phase of the study. It was also taken into consideration during the later stages of the study when the process to establish what additional qualitative methodologies were to be conducted. Taking an ethnographic and auto-ethnographic approach provided the researcher with the

opportunity to live the same experiences as other members of the adventure sport community with whom time was spent during the study; for example, the impact of poor weather was not just observed, but actually experienced. Likewise, the impact of participating alongside a novice participant who demonstrated a tendency toward potentially unsafe and dangerous practices was experienced first-hand, and not merely through observational activities. One benefit of taking this approach was that it allowed relationships to be formed with members of the adventure sport community. Therefore, emotions, feelings, and an understanding of the concerns, communicated during informal communications, were not just documented, but were able to be understood from a first-person perspective, demonstrating the strength of implementing such a research method, and strengthening the validity of data collected – which was primarily to increase understanding, but also to support data collected using the additional qualitative research methods (interviews and narrative inquiry interviews) that were implemented during this study.

3.2.1.1.1 Analytic Auto-Ethnography

Auto-ethnography can be further sub-divided to assist in facilitating an accurate definition of the research activity. The actual implemented research activity can then be more accurately defined and a description of how the collected data have been analysed and used can be provided.

This study utilized the analytic auto-ethnography sub-genre. Anderson (2006) describes the five key features of analytic auto-ethnography, and these were used to inform this study:

1. The researcher is a complete member of the social world understudy.
2. The researcher engages in analytic reflexivity - demonstrating an awareness of the reciprocal influence between themselves, their settings and their informants.
3. The researcher's self is visible within the narrative.
4. The researcher engages in dialogue with informants beyond the self.
5. The researcher demonstrates a commitment to theoretical analysis, not just capturing what is going on in an individual life or socio-cultural environment.

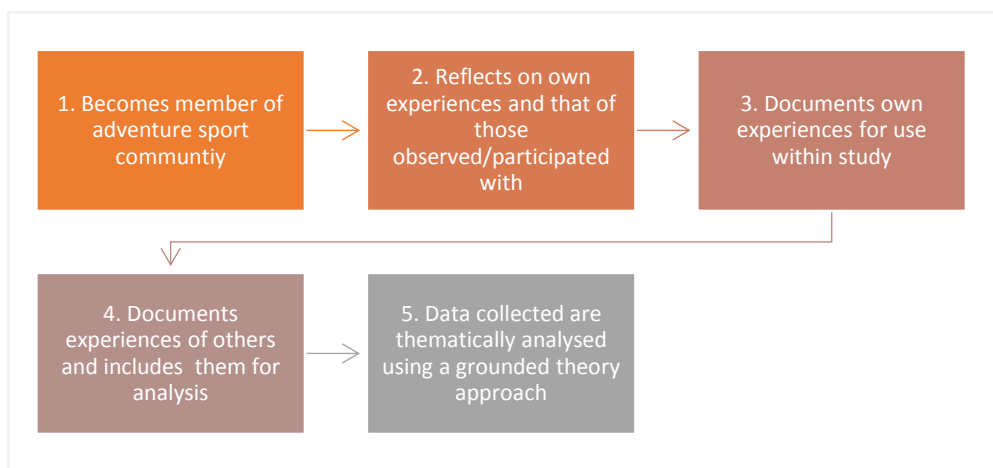


Figure 3.2: Five key actions implemented during the analytic ethnographic phase of the study (adapted from: Anderson, 2006).

The sub-genre of analytic auto-ethnography takes leads from grounded theory, using findings to build upon established theories, rather than test them. According to Pace

“A grounded theory researcher does not commence study with a preconceived theory that needs to be proven, as is common in deductive research methods. Instead the researcher begins with a general field of study and allows the theory to

emerge from the data. Grounded theory is formulated from data using a constant comparative method of analysis with four stages:

- *open coding, which involves breaking down the data into significant concepts;*
 - *theoretical coding, which involves resembling the significant concepts with propositions about their relationships to each other;*
 - *selective coding, which involves delimiting the analysis to only those concepts and relationships that are related to the core explanatory concept; and,*
 - *sorting the theoretical memos into an outline and writing up theory”*
- (Pace, 2012, p. 7)

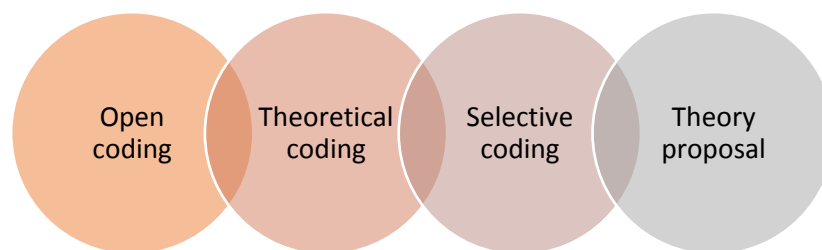


Figure 3.3: Four stages of a Grounded Theory constant comparative analysis. (Adapted from: Pace, 2012).

Although auto-ethnography utilizes stories and narratives, it is not merely about communicating a story or recollection of an event. Narratives of experiences and critical self-reflection exercises present scope for analysis, which may contribute to the development of a theory or explanation in support of the researcher’s hypothesis (or themes of interest, as would be the case within this study). Since the auto-ethnographic method is of a qualitative nature these theories and explanations do not

refer to theories that may be used to generate and test predictions (Pace, 2012). Rather the theories may form explanations that can be used to assist in increasing understanding of why something is as it is, for example, how it happens, why it happens, who it is of value to. It is these theories that generate potential basis for future research (Fawcett and Downs, 1986).

The use of grounded theory analysis within an auto-ethnographical study has been a subject of debate and it has been argued that it may detract from the, almost purist, preservation of the evocative nature and emotion attached to a narrative (Sparkes, 2000). As a result, some auto-ethnographic researchers may decide to communicate findings separately – presenting the story as one part, and the analysis as another (Pace, 2012). However, different studies require different approaches (Ellis, 2004). Although fusing grounded theory analysis and auto-ethnography to form an analytic auto-ethnography may require the researcher to communicate findings using ‘an authoritative voice’ (Ellis and Brochner, 2000), it does not necessarily mean the narratives are, or need be, detracted from. Charmaz suggests that:

“...by adopting a constructivist approach to grounded theory, researchers can avoid the possible authoritative objectivist trappings of the method. This constructivist approach to grounded theory recognises the following assumptions:

- *people create and maintain their own realities by seeking understanding of the world in which they live and by developing subjective meanings of their experiences;*

- *grounded theory researchers can only claim to have interpreted a reality, dependant on their own experience and the study participants' portrayals of their experiences, rather than a uni-dimensional, external reality;*
- *grounded theory does not seek a single, universal and lasting truth, but remains realist because it addresses human realities and assumes existence of real worlds;*
- *grounded theory is not free from bias, but reflects how the researcher thinks and what the researcher does about collecting and shaping the data;*
- *grounded theory tells a story about people, social processes and situations that has been composed by the researcher – it does not simply unfold before the eyes of an objective viewer; and,*
- *grounded theory does not approach some level of generalised truth, but constitutes a set of concepts and hypotheses that other researchers can transport to similar research problems and to other substantive fields”*
(Charmaz, 2006, p. 523)

3.2.1.1.2 Underpinning Rationales

To underpin the research methods two phenomenological theories were taken into consideration during the study – hermeneutics (Heidegger, 1927 (translated into English 1962)) and heuristics (Moustakas, 1971). As discussed previously, collected data were analysed using a grounded theory approach, whereby each set of data collected during the qualitative phase was analysed on both an individual basis and collectively. Findings were then used to inform the next phase of data collection. The

quantitative phase could not commence until the qualitative phase had been completed in terms of data collection and analysis. However, throughout the study the following theoretical phenomenologies were drawn upon, and used to inform and direct the study.

Heidegger (1927/1962) tells us that hermeneutical phenomenology focuses on the exploration, understanding, and interpretation of common practices, providing a phenomenon that investigates and describes life experiences through phenomenological reflections and texts. The hermeneutic theory offers researchers a means to explore experiential issues related to being in the world, also referred to as the da-sein or situated meaning of a human in the world.

For the purposes of this study, Hermeneutics was applied to the analysis of the qualitative research methodologies, and was used to interpret and identify meanings that might influence the decisions, motivations, and reasoning behind associated actions of adventure sport participants, rather than restricting observation to the surface explanations and perceptions, as per those narrated or discussed during the data collection activities.

Moustakas (1961) explains that the word heuristic is derived from the Greek heuriskein, which means to discover or find, and refers to the process of seeking to further understand experiences by developing methods and procedures that might allow for more in-depth investigations and analysis. When taking a heuristic approach, the researcher begins with a question or problem they wish to illuminate or answer.

The question is often attached to a personal interest, and as such, can often take an autobiographical form. However, the emphasis remains on uncovering new knowledge that is of social significance to the group, community, or individual being studied. With a continuous motivation toward better understanding human experiences, the researcher utilises various data sources, including, artwork, photographs, personal documents and other creations to create a comprehensive narrative that is vivid, alive, accurate and meaningful. Heuristic investigations tend to culminate in a creative synthesis.

The Heuristic approach fits well with those approaches associated with problematization, and was primarily applied to the analysis of the auto-ethnographic/ethnographic data which were collected by the researcher during periods of field study, participatory, and observatory research. It was also considered, in a less targeted form, and therefore more loosely applied, to the analysis of the interviews and the narrative inquiry. Since collecting photographic memories was observed to generally form a significant part of the actual adventure sport experience for many participants, this medium became useful as a critical part of the data collection. During the course of the study a large collection of photographic images was collected, and a specific focus was placed on the inclusion of photographic evidence during the analysis. This was particularly useful when it was not possible to make data recordings using any other medium (e.g. audio or researcher notes), and assisted the researcher in recalling specific details, for example, the exact location that a conversation occurred, the number of other participants involved in a particular activity (e.g. if a large group of participants had been divided into smaller groups to carry out a specific activity) etc. Photographs were also useful for recalling the

environmental conditions, what other participants were wearing, even body language and facial expressions.

3.2.1.1.3 Procedure and Data Collection

As the researcher was, prior to, and at the time of the study, a regular adventure sport participant, taking an auto-ethnographic approach permitted reflection and analysis of the researcher's own experiences of the adventure sport industry, and associated communities. In taking this approach, the opportunity to collect data far exceeded that which would have been available by means of observational activity, or through constructing an event or series of events, such as a focus group. To support the data collected by taking an auto-ethnographic approach, observational and participatory activities were also implemented, making use of ethnographic research methods. By exploring the day-to-day lives of those involved with the adventure sport industry, and associated communities, the study became, in part, a lived experience, and data were collected from a first-person perspective. This allowed the researcher the opportunity to gain an increased understanding of how experiences were interpreted and understood, uncovering the meanings of these experiences to the participants involved, as well as experiencing the feelings, emotions, and concerns that were associated with actually being an adventure sport participant.

Prior to data collection, and in order to apply the methodology appropriately, it was considered imperative that the researcher possessed sufficient experience and knowledge as an adventure sport participant, and had access to the appropriate contacts, to allow an auto-ethnographic study to be both efficiently and effectively

conducted (Sands, 2002). This was critical because it was important not to cause disturbance or inconvenience to any of those adventure sport participants with whom time was spent. It also allowed the work to fit within the time constraints allocated to the study, especially since there was not anticipated to be sufficient time to learn (at the very least) the basic skills, and to form appropriate connections and relationships with those already established within the adventure sport industry, and associated communities.

Prior to commencement of the study, the researcher undertook a short period (approximately six months) of employment with a small (SME) adventure sport experience provider located in the Cairngorms National Park (Highland, Scotland). This period of employment was not associated with the study nor did it contribute in any way to the data collected. However, during this period of employment a strong and in-depth understanding of the adventure sport industry, community and participants was formulated. Knowledge gained during this period of employment was loosely utilised in terms of providing an introduction to a basic level of industry-standard knowledge appropriate to the adventure sport industry, for example, an understanding of industry specific language, and an awareness of different types of adventure sport activities and necessary requirements for participation. This knowledge and understanding was further enhanced throughout the course of the study. This approach, of utilising knowledge acquired prior to the commencement of a study is typical of an ethnographically directed research project (Sands, 2002). Sands (2002) highlights that quite often it is this exposure that influences or prompts the perceived need for investigation or exploration of a question – even if the need is not realised until much time has elapsed, or until the need and/or opportunity to

conduct the study arises, as was the case in this instance. This ethos resonates with that of taking a heuristic approach, where the researcher seeks to highlight an experience or multiple experiences in a theoretical and conceptual manner, so that they might increase understanding of an area that is of social significance (Moustakas, 1990). This also aligns with problematization approaches, design thinking and ideation.

For practical reasons and to respect the privacy and anonymity of those professional and recreational participants who the researcher observed and participated with during the ethnographic and auto-ethnographic data collection activities, exact conversations were not recorded or transcribed. Instead, all recollections of events, conversations, and points of interest were documented by the researcher as a narrative; researcher notes, blog (WordPress) entries and/or photographs were reflected upon in the context of being a part of the researchers own experience. Additionally, this allowed for a large sample of adventure sport participants to be surveyed, and data to be collected in a manner that aligned with the ethos of the adventure sport community, which is often at the last moment, on the spur of the moment, yet also aligned with the ethical permissions granted by the University of Abertay Ethics Committee. From a practical perspective, it was not always possible to make formal data recordings; for example, it may have been dangerous to do so while participating in a particular activity, or environmental factors, such as inclement weather, may have prevented recordings being made. As such, taking this approach meant that it was possible to include more data than if the only data to be considered for analysis were those which had been formally recorded.

Data relative to this phase of the study were collected over a period of approximately eighteen months. Initially data collection activities focused on exploring adventure sport participation in Scotland. During this part of the study the need was identified to take into consideration other geographical locations which are considered popular with adventure sport participants. Identifying these locations, where a significant proportion of the local economy relies on an income/revenue from adventure sport activities and participants, was considered imperative in respect of being able to conduct a comparison of the adventure sport industry and associated communities as a whole. It was also anticipated that taking into consideration changes that are occurring in other adventure sport locations, and conducting a comparison of these, might allow an understanding of concepts and/or solutions implemented elsewhere, successfully or unsuccessfully to adapt and meet the needs of participants, which in turn could be useful in informing this study.

Figure 3.6 and Figure 3.7 below provide an outline of the locations in which activities associated with the study were conducted. The figures also specify which adventure sport activities were participated in by the researcher in the Highlands, Scotland, and the Lake District National Park, England (see Appendix 1 for a full list of activities and locations).

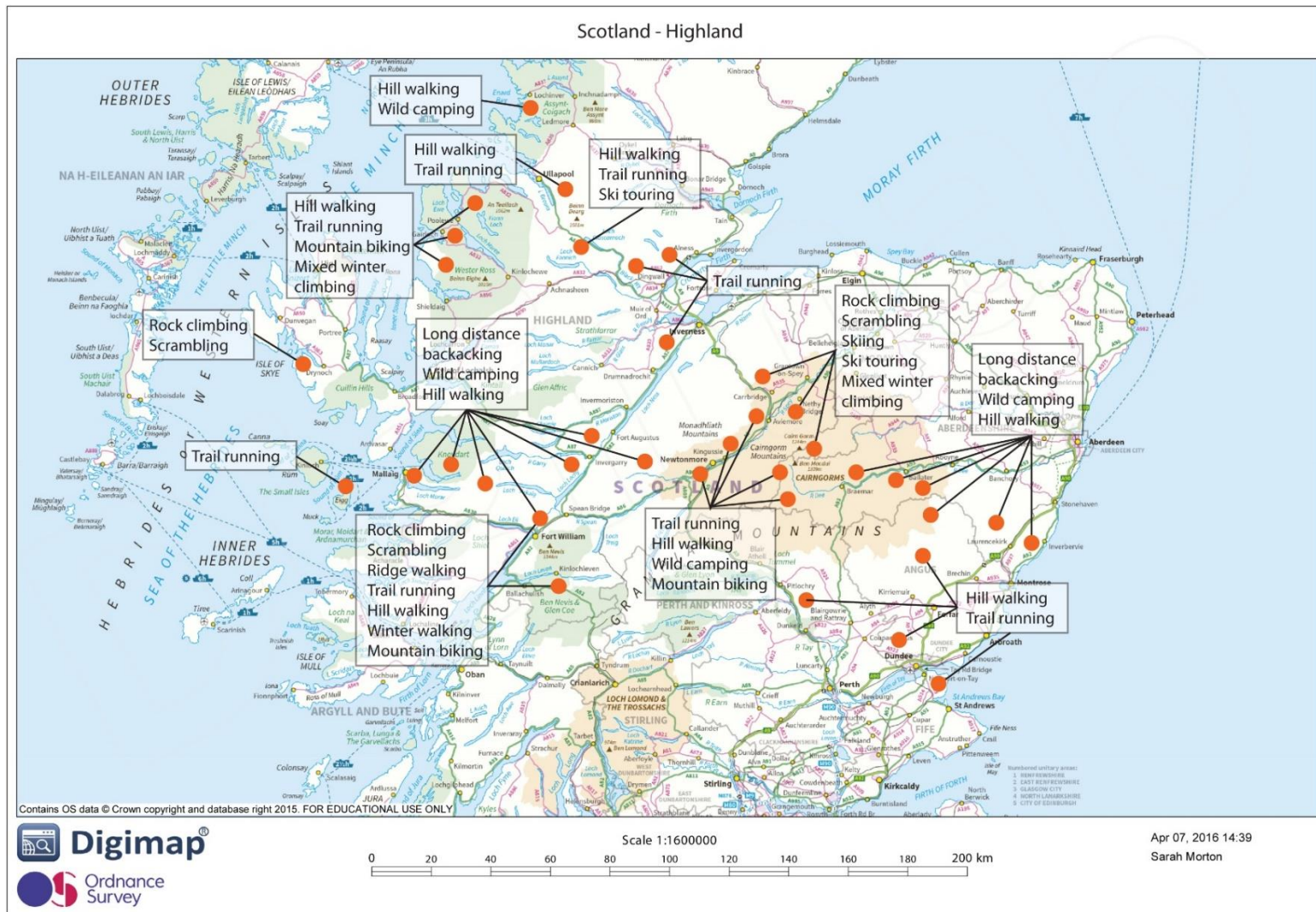


Figure 3.4: OS map illustrating adventure sport activities and locations in Highland, Scotland where ethnographic and auto-ethnographic field research and data collection was conducted.

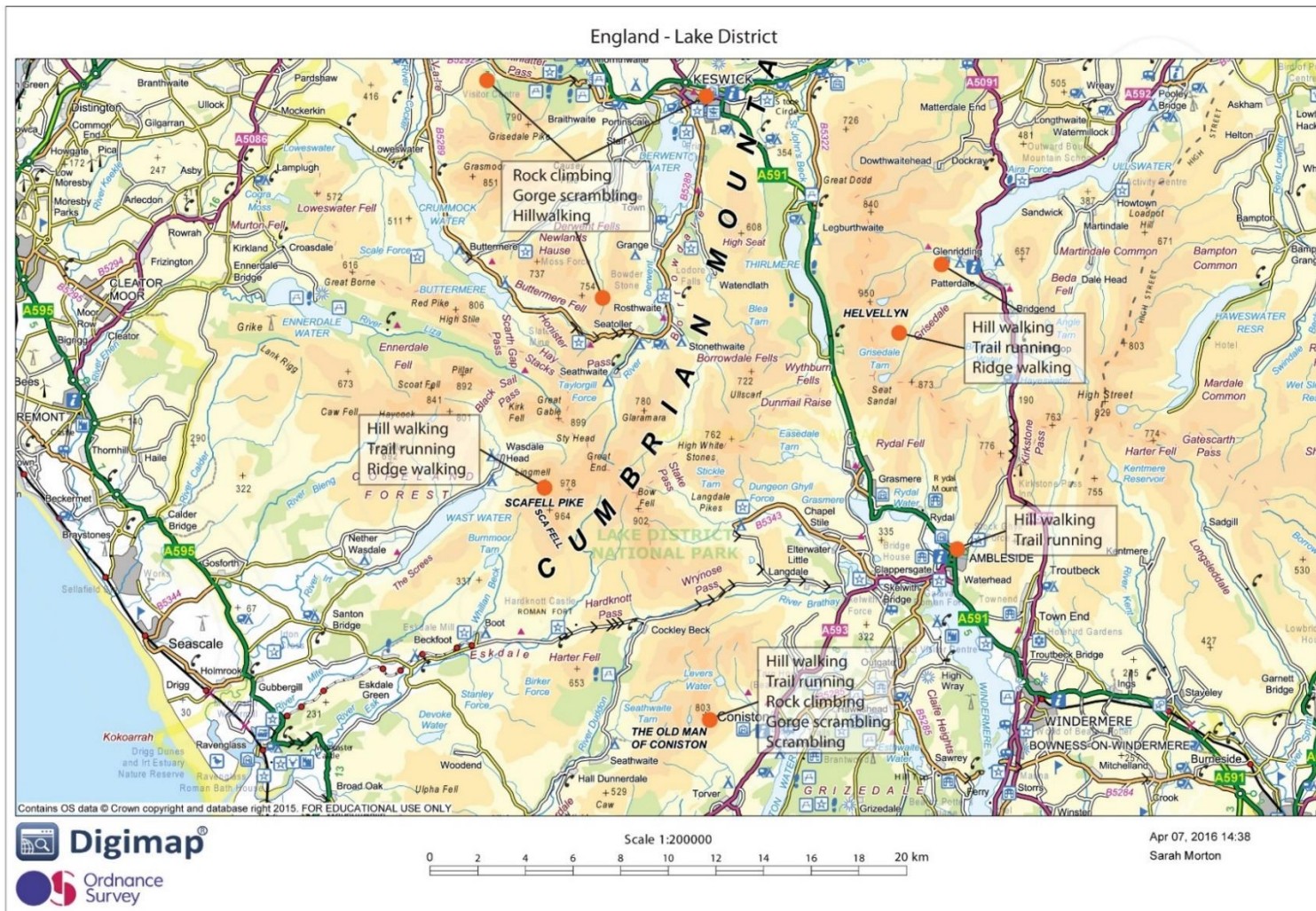


Figure 3.5: OS map illustrating adventure sport activities and locations in Lake District, England where ethnographic and auto-ethnographic field research and data collection was conducted.

During the earlier stages of the study, for the first six months or so, activity participation was generally undertaken with at least one other adventure sport participant, normally one possessing more experience, skill, and knowledge. This was an intentional approach and one that provided benefit to the development of the study in respect of building relationships with other participants, including being introduced to others, some of whom became involved with the study as it progressed. It also assisted in the development of the researcher's own knowledge, skills, and confidence, which then allowed activity participation to be conducted as solo/lone events, and also with adventure sport participants with lesser experience. This permitted the researcher to gain a broad perspective insight from adventure sport participants of varied levels of skill and experience, from novice right through to professional/provider level.

As the study progressed, it was noted that the researcher began to be perceived differently by other adventure sport participants than she had been during the earlier stages of the study. This was considered to be likely due to a number of factors including growth of confidence when participating, and the ability to speak the language, but also in the development of relationships with other adventure sport participants and increased sharing of knowledge, most especially in respect of opportunities. For example, as experience and expertise of the researcher increased, and relationships were formed with other adventure sport participants, it was noted that it became easier to secure time with others – to participate in activities with them, and to generally spend time with them. This was especially useful in terms of gaining a perspective of the full lived experience of adventure sport participants, and to be able to collect data based on not just actual participation, but also within a more social

environment. This was experienced with varied skill levels of adventure sport participants, and it was true that a degree of acceptance, in terms of being an experienced and competent adventure sport participant, was noted by the researcher – from both more experienced participants, as well as those with less experience.

There were a number of opportunities offered to the researcher that were considered to be quite crucial to the study, in that they actually allowed the researcher to shift from experiencing adventure sport activities in the context of simply participating in such, to being in receipt of recognition for this participation. Two of these opportunities were sponsorship style opportunities. It was established that these came about as a result of a WordPress blog that was created by the researcher to document adventure sport activities and experiences, and also to build relationships with other adventure sport participants. The effect of this was experienced first-hand and resulted in attention from other adventure sport participants who were completely unknown to the researcher, but were interested in the WordPress blog entries. This permitted the researcher to gain an understanding of the concept of the ‘punter’ style sponsorships. These types of sponsorships were discussed by a number of the experienced adventure sport participants with whom time was spent during the study, who offered different opinions on the subject; for example, some were concerned about the degree of professionalism that it is possible to present via a recreational adventure sport participant blog, some appreciated the value that this type of exposure had in terms of increasing necessity for adventure sport provision, thus providing a positive economic contribution to the industry. Although there was no intention by the researcher, at any point during the study, to promote herself as a professional adventure sport participant, or of promoting an ability to possess the skills to be able to participate at a specific

skill level, it was clear that some of those who indicated an interest in the WordPress blog entries etc., did view the opinion of the researcher as valid and of importance, when, in fact, they were auto-ethnographic documentations of an experience. It is fair to say there could have been a blurring of definitions at this point and there was a necessity by the researcher to ensure careful management of these types of situations, as and when they arose – for they were not anticipated or predicted as events that might or could occur as a result of the data collection activities. The researcher managed these situations by discussing and elaborating on the study, the intention of the study, and the rationale for implementing specific approaches and methods as a part of the study. The response from other adventure sport participants was always positive and very encouraging, in many cases clarifying the purpose of the study. The position of the researcher in enhancing any ongoing or future dialogues, and the importance of the work to those adventure sport participants involved, or with an interest in the study, was clearly observed and noted. Some even stressed the need for work to be done in the subject area of adventure sport generally, and appreciated the efforts being implemented by the researcher. This acceptance was encouraging, and was useful when considering the concept of community and the importance of community to adventure sport participants.

Taking this approach was immersive and time-consuming, and required a huge degree of dedication, as well as flexibility from the researcher to take up offers to participate in activities with other adventure sport participants. Additionally, a degree of personal time was required that did not provide a direct contribution to the study, in that data were not actively collected. This was necessary in order for the researcher to progress to a skill level that was of sufficient standard to permit the researcher to be in a position

to undertake opportunities to participate in activities with significantly more experienced participants. This also allowed the researcher to gain an understanding of the skill development process and necessary requirements needed to transition from one skill level to another. Because of the nature of the data collection, which required the researcher to be physically active, and was occasionally conducted in locations where it was not possible, or safe, to make either analogue or digital data recordings as stated earlier, a significant amount of the data collected were recorded and documented as soon as possible after the actual event. However, this was not always the case, and on occasion notes were made on location and during the event. To ensure minimal loss of data, photographic images were taken regularly and during almost all occasions of data collection. Photographs were taken using the camera function on the researchers own mobile smartphone device. In addition, some participants gave consent for the use of their own, personal photographic images. These were shared with the researcher either by email, or via social media, for example Facebook. And so, expressions, body language, emotions, and specific activities could be recorded at the very moment they occurred, to be documented later alongside the researcher notes and transcripts. When data were recorded following the event, efforts were implemented to attempt to do this as efficiently as possible. This was to ensure minimal loss of data. The researcher also implemented a period of reflection whereby notes were later read and reread and memos added to these ahead of analysis.

The opportunity to assist with the development of a small adventure sport company (just one employee – more a self-employed effort, however, the preference was to promote this business as a company, with an objective of expanding in the future if it

was possible to do so, rather than as a freelance provider) was presented to the researcher during the auto-ethnographic study. The company approached the researcher and requested guidance in respect of designing and developing a website, and implementing a social media strategy to promote their business. This permitted access to a number of facets of the adventure sport industry that would not have been possible otherwise, and also allowed relationships to be developed with other adventure sport participants of this level, i.e. professional/provider level adventure sport participants. The company were willing to share their insights and experiences of both attempting to cater for participants (i.e. paying clients/customers), and narratives of on-the-job experiences, including both positive and negative encounters. Access to this level of participant also granted the opportunity to participate alongside professional/provider level participants when they were actually facilitating activities on behalf of others (paying clients/customers).

This opportunity provided insight in respect of all aspects of preparation, participating in an/the activity proper, and events post-activity, including an opportunity for the professional/provider to express their opinion(s) openly and honestly of how they felt the experience had been. These data were not documented in the style of a verbatim transcript; this was not felt to be an appropriate approach, because in doing so there was potential to change the dynamic of the relationship between the company and the researcher. This was a concern because the purpose of the initial contact had been to request assistance in developing the company, not to be a part of the study; the agreement to do so came later. It was considered that introducing a more formal method of data collection, i.e. recording conversations, may have had potential to alter the relationship. This could have been a detriment to the study, and also to the

relationship that was being developed with the company. However, researcher notes were made where possible immediately after the interactions, reflected upon, and used to inform the study.

There were some months and weeks when data collection activity, with others and alone, was conducted on a daily, or almost daily, basis. Data sets collected from the auto-ethnographic phase were of significant quantity, comprising data from seventy nine actively involved participants (individual participants n=36, grouped participants n=43) with whom the researcher interacted, and data from indirect participants who were observed using the ethnographic approach (total number of indirect participants was not recorded), and it was essential that breaks were taken from data collection to allow the data to be extracted and transferred to a data sheet, ahead of analysis. Taking this approach allowed for phases of reflection and identification of what may be missing from existing provision. These periods of reflection influenced the next phase of auto-ethnographic data collection. An element of analysis occurred during and following all data collection activity; this assisted in informing the direction of the study in parts, and as a whole, and it was during this phase of data collection that the need to conduct more formal interviews, in order to elaborate on and validate emerging themes, was identified.

3.2.1.2 Interviews

During the auto-ethnographic phase of data collection it became clear that it would be useful, and indeed necessary, to implement a more formal interview

approach. The purpose of this was to allow those themes which had begun to emerge to be further explored, with the intention of validating and confirming those findings which were emerging from the analysis of auto-ethnographic data sets. There was also an interest in exploring the experiences of female adventure sport participants, and gaining a better understanding of their experiences in order to compare this to what had already been observed by the researcher, and to compare with the literature that had been surveyed (Puchan, 2004, Rickly-Boyd, 2012). Because much work had already been done, and a solid awareness of the adventure sport industry, associated communities, and individual participants had been formed during the earlier parts of the study, it was decided that the interview process should be approached in a very defined and considered manner, in that findings from the auto-ethnographic phase should be carefully considered when defining the structure of the interviews, the content of the interviews, and participant recruitment.

Following approval from the University of Abertay Ethics Committee, the process to recruit participants for the interviews was commenced. Potential interview participants were identified based on an existing knowledge, possessed by the researcher, of their connections with and their interest in adventure sport activities, and also through observations of on and offline media sources. The potential interview participants were then closely monitored by following their social media use and/or exposure through these mediums, and through direct correspondence (emails, text messages, online messaging, and face-to-face conversations) for a period of almost nine months. This approach was similar to the observational phase implemented by Ricky-Boyd (2012) during their ethnographic study of 'lifestyle climbers'. From an initial sample of

five potential interview participants, two were identified as being appropriate to take part in the study (vetting criteria for inclusion are further discussed below).

A sixth potential interview participant came forward via the SkiAscent (www.skiascent.com) website which was created following a request from a professional/provider level adventure sport participant, to assist them in developing their own adventure sport company (see Section 3.2.1.1.2). In collaboration with an IFMGA British High Mountain Guide, the site was created by the researcher using the WordPress web hosting platform. The website itself remains live and in existence, but it was not feasible for practical reasons to include the impact of it as a critical element of the study because it would not have been possible to collect, for example, meaningful user analytic data that had been collected for say two or three years, since this would have not fitted with the timeframe allocated to the study. Additionally, evaluating the impact of the website was not part of the study. However, it did act as a platform to engage with other adventure sport participants and provided insight into the adventure sport community from a sort of 'insider' perspective. The development of the website also assisted in raising awareness of the needs and requirements that are associated with acting as a provider of adventure sport activities. It became clear that building a business in the adventure sport context was actually a huge undertaking, and one which posed potential to form a research study in itself – a task which would have significantly outweighed the timeframe and resources allocated to this study.

The sixth potential interview participant who came forward and expressed an interest in the study was, to the researcher, a completely unknown adventure sport participant

(stranger), and had not been part of the vetting process which had been conducted in order to assess the suitability of the other potential interview participants (see Section 3.2.1.2.1). Therefore, it was considered imperative that a period of time be allocated toward understanding the motivations and experiences of this particular potential interview participant. There were two reasons for this, firstly, to understand how the participant had come to make contact via the SkiAscent website, and secondly, to assess how suitable the participant would be to be included as part of the data collection activities (and to actually identify which, if any, data collection activities might be most suitable/appropriate for the participant to contribute to, because it was appreciated that although the participant was interested in the interview component of the study, the participant may not necessarily have been suitable for that phase, however, that would not immediately mean exclusion from another phase of the data collection).

A period of intensive vetting of this participant was conducted in the format of a two-day winter mountain skills session in the Cairngorms National Park. The winter mountain skills session itself was conducted under the professional guidance of a British Mountain Guide, and included participating in winter mountain walking skills (including using crampons and ice axes) and winter mountain rope skills (including travelling/walking while roped to another and crevasse rescue methods). During the session the potential interview participant expressed an interest in the study, and discussed numerous experiences which were considered to be of relevance and interest. Notes were recorded and reflected upon by the researcher, and were anticipated to be useful in contributing to the ethnographic and auto-ethnographic phase of qualitative data collection, however, the practical experience of this particular

participant was found to be made up largely based around holidays and trips, which are understood to be predominately guided by a professional level adventure sport participant. This guidance can, but is not limited to, include instruction, accommodation, and provision of necessary kit and equipment. Based on data already collected and analysed earlier in the study this was not considered to be in alignment with the typical approach and/or ethos of one who considers themselves to be a part of the adventure sport community. Considering this, it was decided that conducting data collection with this potential interview participant would not be of benefit to the study. Excluding this type of participant may appear to be an omission of a data collection opportunity from the study; it may be realistic to presume that adventure sport participants who are unable to participate on their own merit and by their own means may contribute a differing perspective and data set, than those who prefer, and are able, to participate for themselves. However, this type of adventure sport participant was allocated extensive consideration and observed throughout the ethnographic and auto-ethnographic study. Conducting a formal interview was not considered necessary.

3.2.1.2.1 Selection of Interview Participants

In order for interview participants to be selected, a period of time was allocated to developing a series of criteria which could be used to inform the selection process. These criteria were defined using the findings from the analysis of the auto-ethnographic phase. During this phase, it was decided that more directed research was required to be able to accurately define when the transition phase from novice participant to intermediate participant actually occurs. Based on available data, three

years was found to be a decent period of time of actually being an adventure sport participant to have allowed the transition to occur to at least some degree, while participants were also still 'new enough' to adventure sport participation to be able to reflect on the experience of developing their skills and knowledge, and therefore being able to reflect on and discuss the skill level transition. Recently established recreational adventure sport participants were specifically sourced because one line of inquiry looked to explore barriers that novice adventure sport participants might experience when accessing adventure sport activities in Scotland; it was considered important that they could recount clear recollections of any significant events or encounters of interest, but also that they were not so well established that they considered themselves to be beyond the remit of this part of the study, in that they were employed in a professional capacity, or had been participating for such a long period of time that it was not possible for them to accurately recount their experiences of becoming an established adventure sport participant.

One intention of exploring any barriers to participation was to assist in better understanding the transition from novice to intermediate participant, and to consider how these experiences could be used to benefit participants who had taken up adventure sport activities as a result of the emergence of the *experience economy*, as well as better informing providers of adventure sport activities.

Of all participants identified and monitored as being potentially suitable for being interviewed during the study, all were females in their early 30's, and of white British (Scottish, Northern Irish or English) descent. All were based (living full-time) in the UK,

and in full-time, paid employment. Of the six potential interview participants, one was single – the others were married or in long-term relationships.

The adventure sport participants who were identified as being suitable to take part in the interview were selected based on the understanding that they had amassed a sufficient degree of adventure sport participation and experience, and this was based on the criteria that they:

- participated in more than one adventure sport activity on a regular basis for at least three years
- had sampled and participated in a range (more than four) of adventure sport activities
- participated in adventure sport activities as part of more than one of their main holiday(s) (5 plus days)
- participated in adventure sport activities as part of short (3-4 days) and weekend breaks (2 days) on a regular basis
- had participated in adventure sport activities in Scotland, the UK, and Internationally
- were recognised as having made a significant contribution to, and received recognition, for this contribution in relation to at least one adventure sport activity that they participated in (e.g. sponsorship).

Of those potential interview participants, two females were finally identified as being appropriate for the study since they were the only potential interview participants that met the criteria listed above.

Although a sample of two interview participants is relatively small for a study of this size, the objective was to obtain rich and in-depth qualitative data appropriate to the study which could be analysed alongside data collected during the ethnographic and auto-ethnographic activities, and the planned narrative inquiry interviews. Additionally, this small sample was not recruited from a canvassing exercise. Rather, the sample was carefully selected based on a defined selection criteria, as outlined in the points above. It is fair to say that defining the selection criteria, and monitoring the potential interview participants actually formed a part of this data collection activity, and indeed informed the study as a whole. Furthermore, the interview process was a part of a larger phase of data collection, and therefore a large sample size was not necessarily considered to be imperative to the success, or indeed failure, of the study.

Regardless of the selection process, and the rationale implemented for conducting the interview process, it was accepted that a further sample of interview participants may be required, and therefore it may be necessary to identify another sample set, and to conduct another round of interviews. This was only considered necessary in the event that the data sets did not produce sufficient results from the first round of interviews.

Prior to commencement of the interviews and data collection, the nature and objectives of the study were fully explained to the participants, and informed consent was obtained. Participants were offered the opportunity to discuss the study in greater detail or ask questions – they were advised of the procedure, should they wish to withdraw from the study at any point, and were provided with necessary contact

information to action such. Participants were advised that responses would be used in an anonymous manner within the study.

Copies of interview transcripts and analysis data were made available to all participants. Although both participants declined this offer, they expressed an interest in reading the full study, when complete.

3.2.1.2.2 Procedure and Data Collection

Following an afternoon of adventure sport activity (off-road trail running), interviews were conducted on a one-to-one basis. The interviews (Appendix 2) were structured with pre-defined questions (Appendix 2.1) that were formulated to explore both reasons and motivations for participation, as well as any barriers that may have been experienced when the participants were accessing and/or attempting to access adventure sport activities. The interview participants were prompted, during interviews, to elaborate on answers, or answer impulse/in-the-moment questions (Appendix 2.2 and 2.3) that the researcher identified in response to the answers provided to the pre-defined questions (Appendix 2.1). The interview participants were not presented with questions that implied or suggested they may have faced barriers, or any issues when accessing and/or attempting to access adventure sport activities. Additionally, the initial means of approach to request their contribution to the study did not imply or suggest that any problems had, or may have, been experienced as a part of their general involvement with adventure sports:

“I wondered if you would by any chance be a participant in my research study for my PhD?

I need to interview people who have really embraced the outdoors - but were previously non-participants - and explore their reasons for doing so...

And also to uncover what might have encouraged them sooner, or try to find out where they see the gaps and perhaps how they think these gaps might be filled...”

The interview weekend was conducted in a relaxed and informal manner. This was an intentional approach, allowing open dialogue to be exchanged, and ideas, information, and experiences to be shared without the participants feeling they were being observed, and that data recordings were being made in an obvious manner. Both interview participants consented to the collection of data outside of the recorded interview, i.e., comments, observations, expressions, preferences, etc. Participants were advised that these additional data were intended to be used alongside the audio recordings and transcripts from the interviews to inform the study. These additional data recordings contributed to the ethnographic and auto-ethnographic data sets, and assisted in elaborating on and confirming data gathered during other periods of field research activity. They were also useful in informing and influencing the direction and format of subsequent research activity.

This holistic, almost fluid, approach aligns with that of other studies that have used ethnographic approaches (Sands, 1999). During the course of the weekend, and during the formal recorded interview process, it became clear that taking this approach actually allowed the interview participants to relax and enjoy the research process; in fact, both participants indicated they would be interested in contributing further to the

study, if necessary, using the same format. It is believed that by allowing the participants to communicate and discuss narratives in an environment that is familiar and comfortable to them (i.e. the outdoors) helped to generate the rich data sets of relevance to the study, and also allowed unexpected dimensions to emerge which may not have happened had a formal interview been conducted as the primary and/or standalone activity. For example, if a stand-alone interview had been arranged to take place at a specific time and location, and that had been the only contact that occurred between the researcher and the participant, there may have been potential that much of the useful and interesting data may not have emerged.

Interviews were recorded using a digital recording device and later transcribed verbatim. The transcriptions were analysed using a thematic coding process; reoccurring experiences and themes were identified. The analysis of collected data is discussed fully in Chapter 4. Researcher notes were also made following the interviews. Reflexive observations and recollections were made to reflect on the interview process, including thoughts and indications of non-verbal communication. Findings recorded outside of the interview process proper were also documented, however, it is true that some information may have been 'lost in time' since it was not possible to properly record until following the event, and was therefore recalled (documented) from memory. Photographs were taken throughout the course of the weekend, and were taken into consideration during the analysis also.

3.2.1.3 Narrative Inquiry Interviews

In order to further elaborate on those themes which emerged from the auto-ethnographic data collection phase of the study, it was decided that in addition to the

formal interviews it would be useful to the study to implement a second semi-formal interview method that took a less structured approach, and focused less on exploring a list of questions with participants, but rather used a more narrative approach to draw on their experiences as adventure sport participants. One topic that was noted by the researcher, which was discussed on a regular basis and by all levels of adventure sport participants, was kit and equipment modification. It became clear that this was interesting to participants, and something they often discussed in groups or as part of their own, individual experiences. Of course, there were many other topics of interest to adventure sport participants, such as route planning, locations, information resources etc., but the topic of kit was something that appeared to have an individual component to it, that went beyond the who, what, where, and why, and that was, in some cases, hugely personal, and perhaps reflected of personal needs, requirements and interests, as well as being an indicator of skill level and knowledge. Having the confidence to modify a piece of equipment for use is an activity in itself that requires skill, perhaps even more so than identifying a route for an activity.

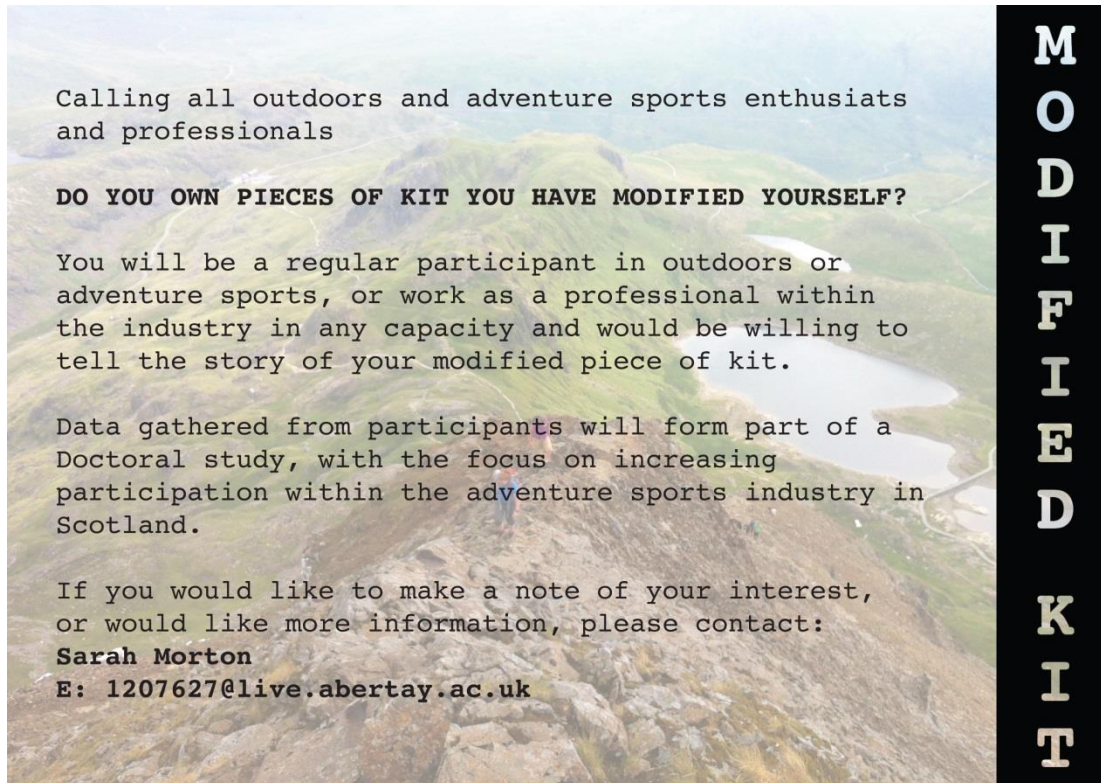
Following approval from the University of Abertay Ethics Committee, participants were recruited to take part in narrative inquiry interviews. Narrative Inquiry interview participants were recruited using a more open, canvassing procedure than that used to recruit interview participants. A recruitment graphic (see Figure 3.6) was designed by the researcher and distributed via appropriate channels including social media, local bloggers and writers, freelance adventure sport professionals, the Mountaineering Council of Scotland, and the National Mountain Centre at Glenmore Lodge.

The graphic made a call to those adventure sport participants who had modified a piece of adventure sport equipment to come forward to take part in the study. The following criteria were not stipulated to enable a wide, inclusive participant base:

- gender
- age
- employment status
- nature of the modification
- approximate date of modification
- particulars of the piece of equipment
- what adventure sport activity the piece of equipment was normally used for

The decision not to stipulate the above criteria was taken so as to permit the collection of data in a manner that allowed the participants the opportunity to speak freely and openly without feeling any constraints that may be, or they may perceive to be, attached to the study – hence the method being termed: ‘narrative inquiry’ interviews. To maintain the rationale behind this approach, it was imperative that potential narrative inquiry interview participants did not form a particular attraction, or non-attraction, toward contributing to the study based on feeling and/or believing that they may or may not meet specified criteria. Additionally, in leaving the call as open as possible the potential for reducing the number of those who might express interest in participating in the data collection was hoped to pose less of an issue. The only specification outlined in the call was that respondents be regular adventure sport participants who had modified the piece of equipment for their own use while

participating in (an) adventure sport activity(ies), either in a professional or non-professional capacity.



Calling all outdoors and adventure sports enthusiasts and professionals

DO YOU OWN PIECES OF KIT YOU HAVE MODIFIED YOURSELF?

You will be a regular participant in outdoors or adventure sports, or work as a professional within the industry in any capacity and would be willing to tell the story of your modified piece of kit.

Data gathered from participants will form part of a Doctoral study, with the focus on increasing participation within the adventure sports industry in Scotland.

If you would like to make a note of your interest, or would like more information, please contact:
Sarah Morton
E: 1207627@live.abertay.ac.uk

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Figure 3.6: The call to action used to recruit adventure sport participants to take part in the narrative inquiry interviews.

Adventure sport participants who considered they may be interested in taking part in the narrative inquiry interviews were invited to express their interest in the first instance by email, directly to the researcher. All of those interested parties who contacted the researcher explained, in the email, that they had either seen the graphic call themselves, or had received it from an acquaintance, friend, or work colleague.

In response, the full nature of the narrative inquiry interview and the purpose of the study were outlined in writing (by return email) to all of those who expressed their interest. The potential narrative inquiry interview participants were asked to provide

some basic information about themselves, and the piece(s) of modified equipment they wished to discuss. All of those who expressed an interest in the study continued the email dialogue with the researcher.

All nine of the adventure sport participants who expressed an interest in the study were involved in the adventure sport industry within a professional capacity. There was a mix of male and female adventure sport participants, however, males (6) outweighed the females (3) (66.6%:33.3%). Age of participants ranged from early 30's to late 50's. Eight of the respondents were employed full-time, and one was a full-time student. Of this group, the student was the only adventure sport participant who was not residentially based in the UK - this respondent was based in the Netherlands. All respondents indicated that they had participated in adventure sport activities in Scotland at some point over the last couple of years, and for a significant period of time, i.e., not just for a weekend or sporadic break.

In total, five of the nine adventure sport participants who had expressed an interest in the study agreed to take part in a recorded narrative inquiry interview. This was a 55.56% return rate on the original expressions of interest. The narrative inquiry interviews were conducted over a period of eighteen months. Of the five, data collected from two participants was available to be used during the analysis phase. One participant withdrew their consent, and expressed a desire for data collected during the narrative inquiry interview to be excluded from the study; another did not return the consent form following a number of requests to do so; and another had not actioned the modification at the time of data collection or before the analysis was conducted. All participants are discussed for completeness, because although data

recorded from these participants was not available to be used during the analysis, they were useful to the study, in terms of understanding adventure sport participants generally.

It was anticipated that the narrative inquiry interviews might provide a platform to explore the following elements:

- images of the modified piece(s) of equipment used to participate in adventure sport activities
- how the modification was carried out
- reasons for why the modification was actioned
- what changes the modification made to the usability of the piece of equipment.

Further, it was hoped that data collected during the narrative inquiry interviews would develop an increased understanding, and contribution to existing knowledge, of the following elements:

- the rationale behind equipment modification
- what benefit equipment modification brings to the participant
- how the participant experience is altered (if at all) by the equipment modification
- if it was necessary to action the equipment modification
- what benefit equipment modification brings to the adventure sport industry and associated communities.

Prior to the commencement of data collection, the nature of the study was explained to all narrative inquiry interview participants, and informed consent was obtained. Participants were offered the opportunity to discuss the study in greater detail and ask questions. The procedure by which to withdraw from the study, if they wished to do so at any point, was clearly outlined to each of the participants. Participants were advised that responses and collected data would be used in an anonymous manner throughout the study.

All participants were offered a copy of the transcript from the narrative inquiry interview; each participant declined, but expressed an interest in obtaining a copy of the final outcome when complete.

3.2.1.3.1 Procedure and Data Collection

Five professionals from the adventure sport industry were interviewed on a one-to-one basis - four in person, and one virtually (online via a Skype video call). Participants were requested to bring the modified piece(s) of adventure sport equipment with them to the interview. This was for the purpose of obtaining photographic images of the modification to be used during the analysis alongside the interview transcripts, and researcher notes. Asking the participants to do this also allowed them to use the piece of modified equipment as a prompt. Thus, allowing them to reflect on the modification while they handled the item, rather than expecting them to discuss the modification on a blind, recalled from memory basis.

Immediately before the narrative inquiry interview was commenced it was explained to all of the participants that the interviews would be conducted in an informal manner, and would not be directed using a pre-defined series of questions. Instead, participants were invited to tell the story (narrative) about their motivations for making the modification to the piece of equipment. They were also invited to provide a description of any implications caused as a result of the modification, to include any positive, negative, and neutral implications that the action(s) had caused, and if the outcome was as anticipated/pre-empted, or if something new had emerged. It was explained to all participants that the researcher may ask them to further elaborate, or provide more details and/or information about the modification.

All of the narrative inquiry interview participants were requested to provide the following details:

- name (for the purposes of participant coding and tracking during the data analysis phases)
- age
- employment status
- residential location.

3.2.1.3.1.1 Narrative Inquiry Interview: Participant One

Participant One (male, early 40's) expressed an interest in taking part in a narrative inquiry interview by email. He had been emailed the call graphic (Figure 3.8) by his line manager. Participant One was met at his current place of employment. The

narrative inquiry interview was conducted in the bar/function room; the room was not in use by anyone else at the time. The narrative inquiry interview was recorded using a digital recording device, and later transcribed verbatim. The transcription was analysed using a thematic coding process, and reoccurring experiences and themes were identified. The analysis is discussed in further detail in Section 4.3 of Chapter 4. Photographic images of the modified pieces of equipment were taken using the camera function on a mobile smartphone device (Appendix 3). Participant One, employed as a Senior Instructor within the adventure sport industry, brought some twelve pieces of modified equipment for discussion at the narrative inquiry interview. Researcher notes were also made following the interview. This was to record observations and recollections from the process, including thoughts and indications of non-verbal communication that may be useful in informing the study.

3.2.1.3.1.2 Narrative Inquiry Interview: Participant Two

Participant Two (female, early 30's) expressed an interest in taking part in a narrative inquiry interview in response to having seen the call graphic (Figure 3.8) which has been posted on a social media website (Facebook) by the researcher. Participant Two, was, at the time of contact, employed to represent a leading adventure sport brand as an adventure sport ambassador, and was residentially based in the central belt, England. To avoid the inconvenience of long-distance travel on either the part of the participant or the researcher, the narrative inquiry interview was conducted by a Skype (online video) call. The Skype call was recorded using a digital recording device, and later transcribed verbatim. The transcription was analysed using a thematic coding process, and reoccurring experiences and themes were identified.

The analysis is discussed in further detail in Section 4.3 of Chapter 4. Photographic images of the single modified piece of equipment (Appendix 4) were sent to the researcher using an online mobile messaging service (Whatsapp), following the Skype video call. Researcher notes were also made following the narrative inquiry interview. This was to record observations and recollections from the process, including thoughts and indications of non-verbal communication.

3.2.1.3.1.3 Narrative Inquiry Interview: Participant Three

Participant Three (male, early 30's) expressed an interest in taking part in a narrative inquiry interview while participating in an adventure sport activity (rock climbing) with the researcher during a period of field research (during the ethnographic and auto-ethnographic study) in Scotland. This verbal expression of interest was then followed up by mobile text message, and a telephone conversation to confirm the interest, and make arrangements. The narrative inquiry interview took place in a public location, and was recorded using a digital recording device. Photographic images of the piece of modified equipment were recorded using the camera function on a smartphone mobile device. Participant Three indicated that they were employed on a freelance basis, as a High Mountain Guide. This role required them to facilitate the guidance and instruction of adventure sport activities, mostly in high altitude locations, for example, the Alps and the Himalaya. Participant Three contacted the researcher again at a later date and advised that his wish was for the data collected from his narrative inquiry interview to be excluded from the study. He did not provide a specific reason for this decision, nor was he prompted to further elaborate.

3.2.1.3.1.4 Narrative Inquiry Interview: Participant Four

Participant Four (female, mid 30s) expressed an interest in taking part in a narrative inquiry interview following a second round of recruitment, again using the call graphic (Figure 3.8). This was circulated again via social media channels (Facebook, Twitter, etc.) making the request for another narrative inquiry interview participant to come forward to take part in the study following the exit of Participant Three. Participant Four was met in a public location, in the centre of Chamonix Mont Blanc (France). During the meeting, Participant Four fully discussed details of the modification and her motivations for doing so. The researcher was also provided with the opportunity to handle a sample of the modified piece of equipment. At the time, it was not possible to make an audio recording of the interview, nor was it possible to take photographic images of the item. This was due to a technical failure with the smartphone device, which was intended to be used as both the audio recording device and camera. Following the interview, researcher notes were transcribed, and a number of follow up efforts were made to contact Participant Four in order to clarify some details, to obtain photographic images of the item, and to obtain informed consent. Despite these efforts it was not possible to make further and necessary contact with Participant Four. Therefore, data collected during this particular narrative inquiry interview was excluded from the analysis phase.

3.2.1.3.1.5 Narrative Inquiry Interview: Participant Five

Participant Five (female, early 30's) had access to direct links to a significant number of media outlets (magazines, websites etc.) and was contacted by the

researcher with a request to share the graphic call (Figure 3.8) with any contacts she considered as being appropriate or having potential to be interested in the study. Following this contact, Participant Five indicated an interest in participating in the study. At this point, Participant Five explained she had not yet actioned the modification, but did have a clear idea of how she might do so, and her motivations for doing so. The meeting to discuss the equipment modification was postponed on a number of occasions for a period of almost eight months. However, Participant Five continued to express an interest in taking part in the narrative inquiry process even though the equipment modification had not yet been actioned. Participant Five was asked, by the researcher, to provide a written narrative outlining her reasons for the modification, and what impact she anticipated the modification might have in relation to her adventure sport participation and experiences. Following this, Participant Five agreed to provide a reflection on the modification process when she had completed it. Participant Five was unable to provide photographs. At the stage of analysis, no further information or details about the equipment modification had been forthcoming from Participant Five. The decision was taken to exclude the information initially provided from the analysis process, as it was considered to be an incomplete data set, and therefore too limited to allow any definite conclusions to be drawn from it.

3.2.2 Data Collection – Phase Two (Quantification)

Following completion of phase one (qualitative data collection) and analysis of data collected during that phase, phase two was commenced. The intention was to gather quantitative data that could be used to better understand, and further elaborate on those themes which had emerged following analysis of data collected during the

qualitative research activities (ethnography, auto-ethnography, interviews and narrative inquiry interviews. It was anticipated that by introducing a quantitative phase, the exploration of the emerging themes could be better understood, with potential to identify, formulate and design a response to any identified perceptions on part of adventure sport participants.

To confirm those theories that emerged following analysis of data collected during the qualitative phase, it was decided that a questionnaire methodology could, in the first instance, establish how important each of the identified themes might be to an adventure sport participant, and in the second instance, to validate, or confirm, the importance of these themes. In order to do this the most appropriate approach was to implement two separate methods. The first was to refine the themes to formulate a score sheet questionnaire, and the second was to refine the findings from the score sheet questionnaire to formulate a confirmation YES/NO style score sheet, which for the purposes of this study will be referred to as validation. Once completed, it was intended that findings from all phases of data collection would then be considered, collectively and as standalone data sets, and used to propose a response, designed to meet the needs and requirements of adventure sport participants, reflecting the identified themes, and considering how the response could be useful in addressing these. The benefit of taking this approach is that it provides the end-users with the opportunity to provide their input at all stages of development, and therefore to become a critical component in both the identification of the issue(s) (i.e. the themes) and to assist in the design of the response.

3.2.2.1 Questionnaire

Using the findings from the qualitative phase of data collection, a series of user needs was formulated and a questionnaire designed to explore how interesting each user need was to adventure sport participants. This was a necessary next step in order to further explore those themes that had come from the findings of the qualitative phases, and also to begin refining them ahead of actually being able to suggest an appropriate response. It was intended that the questionnaire would form one of two quantitative methods implemented during the study, with the questionnaire focusing on the user needs, and using the findings to refine the user needs, and the second quantitative method, a validation activity, being used to confirm the findings.

Following approval from the University of Abertay Ethics Committee, the process to recruit questionnaire participants was commenced. A 'gatekeeper recruitment' approach was implemented, whereby participants are sourced by making a request to existing contacts and asking them to circulate information about the study to their own contacts. The researcher made use of their own database of appropriate and relevant contact to do this. Twenty-five 'gatekeepers' were sent an email with information about the study. Organisations contacted included: SportScotland, The National Outdoors Centre at Glenmore Lodge, the Mountaineering Council of Scotland, and the University of the Highlands and Islands West Highland College School of Adventure Studies. Individuals contacted included: journalists, friends, participants from phase one of the data collection activity, and adventure sport activity professionals and providers. A number of these responded by return email to advise they had circulated

the information, including SportScotland, who expressed interest in being kept informed about developments relating to the study.

Gatekeepers were not asked to share information with the researcher about the number of contacts they had circulated the link to. Additionally, the Survey Monkey online link was not set up to monitor and/or track (i.e. produce analytic tracking style data) the participant source or how the participant had become aware of the study. Therefore, it is impossible to quantify the total number of people who were contacted and provided with information about the study. Additionally it is not possible to gauge the efficacy of the 'gatekeepers' on an individual basis, and to allocate a decision on how much 'use' they proved to be, for example, in terms of sharing the link to the questionnaire, or about how many of the questionnaire participants contributed to the study as a result of a specific gatekeeper. It would have been possible to include a question to ask questionnaire participants where they had found out about the study. However, this was not considered a necessity, nor was it considered that this information would have any impact on the study itself. For some of the questionnaire participants it would have been possible to assume the source of awareness, for example, some participants had clearly been directed to the study from a popular online forum for adventure sport participants. However, again, this was not considered necessary or to be of importance to the study.

Information provided about the study and the phases which had already been implemented as part of the data collection activities were fully outlined at the start of the questionnaire (Appendix 5). This was to inform questionnaire participants of the current stage of the study, and to explain the reasons for deciding to conduct a

questionnaire. The rationale behind further exploring themes that had emerged from phase one of the data collection was also outlined. Participants were informed of who to contact for more information about the study, including details about how to withdraw their participation at any point. Informed consent was obtained. Participants were also asked if they would be interested in participating in future data collection activities associated with this study. The details of those who expressed an interest in future participation were included in a database. It was anticipated that these contacts would be used to recruit participants for the next phase – the validation activity.

3.2.2.1.1 Procedure and data collection

Based on the researchers previous experience of using online questionnaire and survey facilitation tools, Survey Monkey was selected. This decision was made because of the usability and functions available within the tool. Survey Monkey was also considered suitable for facilitating this phase of the data collection because it can also provide analytical insight that can be monitored on a regular basis while the survey is live, thus, easing the load ahead of data extraction and analysis proper. This approach takes influence from grounded theory and iterative approaches. These theories are not normally implemented for quantitative research methodologies and studies implementing these types of data collection methods.

The survey was originally formatted in a Word document, and this was used to inform the design of the online survey. The information and participant consent details were extracted and systematically transferred to the Survey Monkey template (Appendix 7).

This was found to be an extremely favourable approach, especially in terms of reducing the load of participant effort required to complete the questionnaire, since completing an online questionnaire requires much less in terms of actions required to complete than downloading a survey that is attached within an email, completing it, saving it, locating the original email and responding with the completed survey attached to the response email. Taking this approach also assisted in increasing the ease required to circulate the questionnaire, since it is much more streamlined to send a link to an online questionnaire than it is to circulate Word documents that need to be downloaded, saved, completed, resaved, and returned to the original source. Additionally, in terms of data management and analysis, the survey Monkey facility vastly reduces the effort required on the researchers' part, since the data is collected and stored in a format that is easy to manage, in one place, and provides, to a degree, an analysis of collected data that is updated each time a survey is completed.

The content of the questionnaire was formulated based on findings (i.e. the themes) that had emerged from the analysis of the qualitative phase of the data collection activity. Participants were not asked questions about those specific themes that had emerged from the findings, but rather were asked to indicate how important, on a scale of one to five, they perceived particular themes, and components of those themes, to be to an adventure sport participant. The scoring was not based on ranking each of the components from 1 to 5 based on importance, but rather considering each component on its own merit, therefore more than one, perhaps in some cases all, component(s) within each theme could be allocated an identical score.

In total, five themes were identified during the analysis of the qualitative data collected by the study. These were used to inform the content of the questionnaire, and are detailed below:

- i. information about adventure sport activities
- ii. information about adventure sport locations
- iii. building relationships with other adventure sport participants
- iv. developing adventure sport specific skills
- v. ability to monitor adventure sport participation and progress

Each theme was then broken down into individual components which are outlined in Table 3.1.

Table 3.1: Summary of questionnaire themes and individual components of each theme.

Ref.	Theme	Ref.	Component (of theme)
		i.i	What activities are available
		i.ii	What locations activities are available in
		i.iii	Access information
		i.iv	Reliable and trustworthy information (e.g. weather/conditions/routes/equipment)
		ii.i	Where to participate based on skill level
		ii.ii	Where to participate based on activity choice
		ii.iii	What to expect in different locations
		ii.iv	What facilities are available
		iii.i	Based on location
		iii.ii	Based on activity choice
		iii.iii	Based on skill level
		iii.iv	Access to community information
		iii.v	Access to beta information
		iii.vi	Ways to share experiences
		iii.vii	Links to other community members
		iv.i	Most appropriate skills courses for level/needs
		iv.ii	Where [locations] skills courses are
		iv.iii	Links to different skills providers based on individual needs
		iv.iv	Guidance to select a skills course
		iv.v	What to expect from a skills course
		v.i	Facility to record activity [log book]
		v.ii	Facility that matches skill level/ability to participation options
		v.iii	Framework for progression based on individual needs
		v.iv	Information about progression routes
		v.v	Suggestions for most appropriate progression routes

In respect of what the themes and their components represent, the most appropriate way to describe them is to term them user needs. These are the needs which were identified as elements that may be interesting and/or useful to adventure sport

participants, however were not found to be catered or provided for by existing provision.

The purpose of this process was to establish, firstly, if the themes and their components are actually of interest to adventure sport participants, and secondly, to establish the degree of interest. This process allows those components, which the majority of participants find uninteresting, to be removed from the process, allowing focus to be placed on further elaborating on those components which participants consider to be interesting and useful. Those themes and components that are considered to be interesting and/or useful are further elaborated on, and are translated from being a set of user needs to a more refined set of user requirements. A YES/NO style score sheet is then used to validate the user requirements. The purpose of this is to establish the suitability and necessity of including each specific component within the response. The validation activity that was implemented during this study is discussed in more detail in Section 3.2.2.2 of this chapter.

The Survey Monkey link for the questionnaire was active for seventy-eight days. During this time, a total of thirty-two responses were collected. In respect of the findings that emerged during this time, this sample size was considered sufficient enough to be able to inform the study. The initial objective to collect one hundred responses proved to be overambitious. The researcher had exhausted all sources of existing contacts, and although a number of additional 'gatekeepers' were identified (from generic online sources), and contacted, it was found to be very difficult to encourage and generate further responses. This indicated that there could be a

potential saturation in interest of completing online surveys, in general; perhaps we are approaching an exhaustion of asking for opinion(s) to be shared via surveys, or perhaps there is a growing reluctance to spend time (normally recreational) completing online questionnaires. In respect of the researcher's previous experience, and auto-ethnographic reflections on the topic, the effort to request participation in online surveys now appears to far exceed that which was required a number of years ago. As such, the responses that were received were thought to be provided by those adventure sport participants with a vested and genuine interest in the topic. In any case, responses were providing conclusive results, and therefore it was not considered necessary to continue to canvas and recruit a larger sample.

3.2.2.2 Validation Activity

In order to complete the data collection phases of the study, a validation activity was implemented. To do this, findings from the questionnaire were used to develop a series of user requirements, which were a refined version of the user needs that were explored during the questionnaire. The validation activity was used to confirm that the user requirements that had been derived were accurate and reflected an appropriate response to the user needs. This was intended to be the final phase of data collection, and it was anticipated that this method would provide sufficient data that could be used to formulate a response to the themes identified during the qualitative phase of data collection.

Following approval from the University of Abertay Ethics Committee, the process to recruit participants for the validation activity was commenced. Participants who had

completed the questionnaire, and had expressed an interest in contributing to subsequent phases of the study, were contacted using the email address they had provided when they completed the questionnaire. Twenty-seven emails were distributed with information about the study, and a link to the Survey Monkey hosted the validation activity. Of those participants invited to complete the validation activity, eleven proceeded to do so. The purpose of only inviting participants who had already contributed to the study to take part in the validation activity was to maintain a level of consistency required in order for the method to be properly implemented for cross-checking and confirming user needs.

Details about the study, and the stages implemented so far as part of the data collection activities, were fully outlined at the outset of the validation activity (Appendix 6). This was to inform participants of the current stage of the study, and how the necessity to implement a validation activity had been identified. The rationale behind further exploration of themes which has emerged during the qualitative phase of data collection was also outlined. Participants were informed of who to contact for more information about the study, including details about how to withdraw their participation at any point. Informed consent was obtained from participants.

3.2.2.2.1 Procedure and data collection

For the validation activity, a table was formulated using those data that had been collected by the questionnaire. The purpose of using these data was because the validation activity was intended to be used to confirm the findings from the questionnaire. It was anticipated that asking potential end users to confirm the

usefulness of individual components would allow particular components to be either removed, if they were found to not be useful to participants, or to remain as a part of the response, if they were found to be useful to participants.

In order to formulate the table for the validation activity it was necessary to conduct a process of refinement and elimination. Results from the questionnaire were analysed alongside each individual user need and associated component, and a user requirement was suggested in order to appropriately address the user need. For some of the user needs and components, more than one user requirement was suggested, therefore it was necessary to implement a phase of elimination whereby each user requirement was carefully analysed, and any duplication identified, to allow either whole or specific elements of the suggested user requirement(s) to be eliminated from the process. Following this phase of elimination, a series of user requirements were established, and used to populate a table to be used for the validation activity.

The validation activity was designed in a specific manner in order to produce specific results, and as such, was the most structured and directed research method that was implemented during the course of the study. Validation participants were asked to reflect on those responses provided during the questionnaire activity, and to provide a simple YES or NO answer for each individual user requirement to indicate if they considered that particular user requirement to be important to adventure sport participants. A column was also added to the table to allow validation participants to add their own comments and/or notes, if they wished to do so. These comments/notes were intended to be used to ensure the correct user requirements had been identified

by the researcher, and it was intended that they may, if necessary and appropriate, be considered alongside those user requirements which had been excluded from use within the validation activity. This also allowed validation participants the opportunity to provide additional information that could be used to inform the final response but that had not yet been considered or identified during the study.

Table 3.2 provides a summary of each identified user requirement including traceability to the user need (Table 4.3) from which it was derived.

Table 3.2: Summary of Themes and User Requirements used to inform the validation activity.

Ref.	Theme	Req. ID	Description	Need ref . (Table 4.3)
		U_R1.1	A list of adventure sport activities that are available to participate in, in Scotland	Ref.
		U_R1.2	A list of locations, linked to the list of activities, that it is possible to participate in adventure sport activities in Scotland	i.i
		U_R1.3	Information about how to gain access to adventure sport activities with particular locations (e.g. information about a rock climbing venue including car parking, the walk in route, any other facilities etc.)	i.ii
		U_R1.4	Information about things such as weather/conditions/routes/equipment that is reliable and trustworthy	i.iii
		U_R2.1	Information about where (location) to participate in a specific adventure sport activity based on skill level	i.iv
		U_R2.2	Information about where (location) to participate in a specific adventure sport activity based on choice of activity	ii.i
		U_R2.3	Reliable information about what to expect in different locations, including up-to-date details (contributed by members of the community) about things such as fallen trees, route/path obstacles, closed routes etc.	ii.ii
		U_R2.4	A list of facilities that are available in specific locations, such as, camping sites, food/drink outlets, toilets, petrol stations etc.	ii.iii
		U_R3.1	Suggestions of other adventure sport participants to link up/connect with based locally (permission would be asked to allow one's details to appear within suggestions, and suggestions would be offered based on a set boundary (e.g. 10 miles) from one's GPS location or location could be manually entered ahead of a trip)	ii.iv
		U_R3.2	Suggestions of other adventure sport participants to link up/connect with based on what adventure sport activity(ies) are participated in or would want to be participated in (permission would be asked to allow one's details to appear within suggestions, and suggestions would be offered based on a set boundary (e.g. 10 miles) from one's GPS location or location could be manually entered ahead of a trip)	iii.i
		U_R3.3	Suggestions of other adventure sport participants to link up/connect with based on skill level including suggestions of a similar skill level and higher skill level (permission would be asked to allow one's details to appear within suggestions, and suggestions would be offered based on a set boundary (e.g. 10 miles) from one's GPS location or location could be manually entered ahead of a trip)	iii.ii
		U_R3.4	A forum-style facility that members of the adventure sport community can contribute to about things such as events, meet-ups, trips etc.	iii.iii
		U_R3.5	A forum-style facility that members of the adventure sport community can contribute beta information to	iii.iv
		U_R3.6	A facility that allows members of the adventure sport community ways to share their experiences (blogs, stories, photos, videos) in one place that is easy to navigate around and find the appropriate information required/desired	i.v
		U_R3.7	A facility that allows links/connections to be made with other members of the adventure sport community	iii.vi
		U_R4.1	Suggestions for the most appropriate skills courses based on individual skill level and unique needs, e.g., a course for an intermediate level participant that allows them to learn about rick climbing gear placement on a specific type of rock	iii.vii
		U_R4.2	Information about the location of the most appropriate skills courses to meet individual needs (location + skill level + needs)	iv.i
		U_R4.3	Links to a selection of skills courses providers based on the most appropriate for the individual adventure sport participant (provider + skill level + needs)	iv.ii
		U_R4.4	A framework that assists in selecting the most appropriate skills course and provider based on individual needs	iv.iii
		U_R4.5	Detailed information about what to expect from a skills course, including learning outcomes, the type of guidance to expect to receive, detail about the location including the local area etc.	iv.iv
		U_R5.1	A log book style facility that allows the adventure sport participant to record the activities they have participated in, including activity, location, date, and what they thought of it	iv.v
		U_R5.2	A facility that matches participant skill level and ability with suggestions and options for participation	v.i
		U_R5.3	A framework for progression based on individual participants' specific needs	v.ii
		U_R5.4	Information about progression routes including detail about how to achieve individual objectives	v.iii
		U_R5.5	A facility that suggest the most appropriate progression routes based on skill level, ability and participant specific objectives	v.iv

It was understood that circulating the validation activity table using the original Word document format would be unrealistic in terms of providing a medium that was simple and straightforward to circulate to participants by email, and to expect them to return in a timely manner. The Survey Monkey online hosting facility had proved to be sufficient for conducting the questionnaire data collection activity, therefore the decision was taken to use this setup for the validation activity also. Additionally, it was anticipated, that since the validation activity was intended to collect data sets of a less complex nature than that of the questionnaire, the service could be used to assist with the analysis process. However, a manual process of data extraction and analysis was still considered to be necessary in any case, and indeed was the researcher's preferred approach.

Details from the original Word document validation table, including information and consent by participants, were systematically transferred to the Survey Monkey template (Appendix 8). Although there was a period of time required in order to carry out this transfer, it was considered that this effort would reduce the impact on the participants, especially since they had already contributed their time to the study by completing the questionnaire. Additionally, by using Survey Monkey the data could be stored in a manner that ensured it could be managed succinctly, similar to that of a data management filing system. The data management process may not have been so streamlined if it had been managed using the original Word document requesting participants to provide a return using manual email response. This was considered to be too onerous and time-consuming for the participants.

The Survey Monkey link was open for participants to complete for forty-three days, and a total of eleven responses were collected during this time. This was a return of approximately 32% on the number of participants who had completed the questionnaire. Based on the responses provided, and the fact that new responses had stalled, this was considered to be a sample size sufficient to inform the study.

Analysis of the validation activity is discussed in Section 4.3 of Chapter 4, and results in Section 5.3.2 of Chapter 5.

Chapter 4. Analysis and Presentation of Findings

4.1 Introduction

This chapter presents a discussion of data collected during the study. The data analysis phase was itself conducted as a multi-phase activity, taking a grounded theory approach, and underpinned using Hermeneutic and Heuristic phenomenologies. The objectives of the data analysis phase of the study are outlined in Table 4.1 below.

Table 4.1: Data analysis objectives.

Phase 3: Objectives

- *Develop a better understanding of the impact the experience economy has had on the adventure sport industry (in Scotland)*
- *Analysis of emerging changes which may affect the adventure sport industry (in Scotland) since the emergence of the experience economy*
- *Evaluation of existing adventure sport provision, and identifying what is being done to address changes that may be occurring within the adventure sport community*
- *Analysis of the impact any changes may have had on the adventure sport industry and associated communities*
- *Taking an iterative approach to assess and revise design-focused suggestions based on suitability for implementation within the context*

Data collected during the qualitative phase of the study included application of the following methodologies:

- auto-ethnography
- ethnography (observation and participation)
- interviews

- narrative inquiry interviews.

These methodologies were analysed using a thematic coding process; significant codes were grouped thematically and theories identified. Application of, and rationale for selection of, all methodologies discussed within this chapter are fully outlined in the Methods chapter (Chapter 3) of this thesis. The analysis process and findings are discussed in Section 4.3 of this chapter, and results are presented in Chapter 5.

Findings and results of the qualitative phase of data collection were used to inform the quantitative phase, whereby a series of user needs were identified using those themes that had emerged during the thematic coding process implemented during the analysis of qualitative data collected. The identified user needs were grouped and transferred to a tabulated list of defined user needs (Table 4.3). This table was used to inform, in the first instance, a questionnaire, and in the second instance, a validation activity. This process is discussed fully in the Methods chapter - Chapter 3.

Findings from all five phases of the data analysis phase were collated, summarised, and used to inform a design solution that is presented as an appropriate intervention that is intended to provide a response to the problems identified earlier in the study that may be occurring within the adventure sport industry and associated communities. The solution is discussed fully in Chapter 6 of the thesis.

4.1.1 Purpose of study

The rationale of this study is outlined in the Abstract section, and also in Chapter 1 of this thesis. However, here follows a brief summary to set the scene prior to

discussion of the findings and analysis, including an outline of the need for specific lines of enquiry to be conducted within this subject area.

The adventure sport industry in the UK has seen an increase in participant numbers; according to the most recently available Mintel Intelligence report "*Sporting Activities in the Great Outdoors*" (January 2002), it is estimated that 25% of the UK population take part in adventure sport activities on a regular basis (once per month or more). This is an increase of more than 40% since 1989.

Motivation(s) for deciding to take up an adventure sport activity varies widely across participants (Kerr and Mackenzie, 2012). For example, some participants may find they have a natural ability for a particular activity, and this fuels their desire to continue taking part. Some may experience increased desire to be part of something that they are exposed to and/or experience via online sources, for example, via social media channels, on a more regular basis than was previously the case (pre 2000) (Pine and Gilmore, 2011), especially if their friends and online connections indicate regular participation. Or, some may feel they have greater permissions to take part in activities of their own choosing as a result of modern open family structures, where there is more freedom to pursue individual interests and activities that do not necessarily involve the whole family.

The transition from novice participant to intermediate participant also varies greatly. For example, some may dedicate whole weekends to participating in adventure sport activities, and this may involve travelling to pre-identified locations with a specific goal and/or objective in mind, relating to the participation. Others may take a more sporadic

approach and perhaps chose only to participate on a short-break (two-to-three-day intense participation) basis.

Not all new, i.e. novice, participants are able to, or indeed want to, dedicate significant amounts of focused time toward learning the skills necessary to progress through the ranks in the ways traditionally experienced by the adventure sport community. Some may choose to participate on a regular basis (e.g. once or more per week), others on a more ad hoc approach (e.g. on an impulsive/opportunistic basis), and some may demonstrate a preference for sampling different types of activities (this group may, in the future, eventually settle on one or two activities they enjoy and even have a talent for. They may then go on to dedicate more time to participating and thus developing activity specific skills).

Additionally, many new adventure sport participants appear to take up adventure sport activities at a later stage of life than those who progressed through more traditional routes. It is now more common to witness those in their late 20s and 30s to be motivated to take up an adventure sport activity (SportScotland, 2007, Sport England, 2015). Also those with young families are noted to have an interest and this group of participants are quite often driven by the needs and requirements of the children (VisitScotland, 2006, Sport England, 2015). The families with young children group of adventure sport participants were not included in this study. As for the traditional route taken by adventure sport participants, the norm would have been to be introduced to an activity by a family member or family friend. This exposure and introduction to adventure sport activities was discussed by those advanced/provider level adventure sport participants who took part in this study as being most likely to have happened

pre-teenage years. There is little in existing literature to explore the differences between adventure sport participants pre and post *experience economy*.

As a result of those factors discussed above, and considering the increased participant numbers recorded by the adventure sport industry, the stereotypical transition from novice to intermediate participant is potentially being challenged. This transition may now present itself as a much more complex process. The needs and requirements relating to skill level transition, for example developing skills, relationship building with others, and increasing knowledge in general, could now differ quite significantly from one adventure sport participant to another. There will, of course, always be a difference between the user needs and requirements of individual adventure sport participants, regardless of when they did or plan to take up an adventure sport activity. However, based on those trends observed, and the lack of existing literature available that specifically explores the new type of transition from novice to intermediate adventure sport participant, demonstrate that this is likely to be an emergent issue, with a need for research to be conducted in this area. For example, the researcher observed different behaviours among the newer adventure sport participants; some preferred to focus on progressing to more difficult and challenging levels of participation, some wanted to participate to enjoy the environment (e.g., the scenery, flora, fauna, etc.), and some were interested in learning specialist skills, such as navigation and rope techniques (e.g. to lead graded rock climbs, rescue techniques etc.). It was also observed that there was significant difference among participants, in the amount of time taken in order to make the transition to advancing to higher levels of experience and skill. The amount of time largely appeared to be reflected in the amount of time the participant was prepared to dedicate to the activity, and this was

related to enthusiasm on the part of the individual. A certain amount of natural talent also appeared to be required for those who wished to progress to the higher skill levels of participation.

Existing provision for adventure sport activities, although wide-ranging (VisitScotland, 2010), may not be sufficient enough to cater for the individual objectives, habits, needs and requirements of the newer adventure sport participant. That is not to propose a bespoke approach, however, the current 'one-size-fits-all' type of approach that is offered by many adventure sport providers may not provide the flexibility required to enhance existing provision, and therefore may not meet the needs of the newer adventure sports participant, who may have more specific and unique characteristics, as discussed above. This may cause potential to have an impact on the transition from novice to intermediate participant, and beyond.

Little appears to have been done to address this issue. This study found that a gap in existing provision has emerged, which is an issue that causes immediate concern for both providers and participants of adventure sport activities. The study found that this gap in existing provision is allowing a trend to emerge which indicates that some novice participants may be unable to accurately assess their own skill level and make decisions appropriate to that skill level. This issue was discussed by professionals and experienced recreational adventure sport participants on numerous occasions during the qualitative data collection phase of data collection. This observation raised the question about why there appears to be no existing provision that could be useful in meeting the needs of the newer, novice adventure sport participants. Additionally, this presented an opportunity to explore new methods that could be used to reduce this

gap in provision and to allow novice adventure sport participants to make the transition to intermediate level, and beyond, thus allowing the transition to be made based on individual adventure sport participants own personal, and probably unique, needs and requirements. This would also offer the adventure sport industry the opportunity to meet the needs of these participants by responding to their requirements with more appropriate provision, such as skills courses and information resources.

In summary, this study looked to explore current perceptions and changes that are occurring within the adventure sport industry and to consider the use of a more flexible and adaptive approach to provision of adventure sport activities, as well as considering how design thinking and co-design processes could be useful in identifying a problem, and assisting in formulating a solution that could encourage behaviour change and address the themes identified by the study. Using this approach was anticipated to provide a more positive and inclusive approach to adventure sport participation. Therefore, the study could potentially assist in the formulation of a more defined framework for progression and transition between skill level that is appropriate for meeting the unique needs and requirements of adventure sport participants on a more individual basis.

4.1.2 Research Questions

The study took a grounded theory, ethnographic approach, similar to that of Sands (1999 and 2002) and Wheaton (2000, 2004, and 2007), did not set out to explore a specifically defined research question(s) at the outset. Rather an iterative approach was implemented, and in the first instance, focused on exploring changes

that may be occurring and are being experienced by those who are involved with the adventure sport industry and associated communities. Methodologies were selected to permit the research to conduct a wide range of both observational and participatory activities, and these produced data sets that were based on a wide-lens perspective. The implementation of these methodologies not only contributed to collected data sets, but also facilitated the means for the researcher to become immersed within the emerging themes of the study. The researcher took, in the first instance, an observational perspective, with an interest in uncovering interesting themes not already covered in existing literature, and secondly, as a participant to generate first-hand experiences relative to the study. This allowed the researcher to take an initial wide-lens view of the adventure sport industry and associated communities. Research activity evolved to become more focused and involved as themes emerged over time. The initial lines of inquiry did not focus on one specific group of adventure sport participants, but rather considered adventure sport participants as a collective. This allowed the researcher to gain an understanding of both different and similar behaviours across the industry and within associated communities. Doing this allowed information about behaviours and trends, which could be attributed simply to 'how things have always been done', to emerge.

From of this very concentrated and immersive involvement, potential trends, and interesting lines of inquiry began to emerge. These assisted in the formation a set of themes which could be considered as the research problems, and that demonstrated scope for further investigation by the study. Following this process, four key research questions were formulated:

1. What changes are currently shaping the adventure sport industry and associated communities (in Scotland)?
2. Are there emerging changes (since the emergence of the *experience economy*) that may have an effect on the adventure sport industry and associated communities (in Scotland)?
3. What is being done to address these changes?
4. What impact are the changes having on the adventure sport industry and associated communities (in Scotland)?
5. Could a solution be offered to respond to these emerging changes?

4.2 Data Collection Process

The data collection phase of the study was divided into six phases:

- i. Conducting a literature survey (Chapter 2)
- ii. Conducting an auto-ethnographic and ethnographic study (observational and participatory) where the researcher acted as an adventure sport participant alongside professional/provider and recreational (novice and intermediate) level adventure sport participants
- iii. Conducting narrative enquiry interviews with professional/provider and advanced level adventure sport participants
- iv. Conducting individual interviews with regular adventure sport participants
- v. A questionnaire distributed to adventure sport participants
- vi. Validation activity with adventure sport participants

4.2.1 Phase i of Data Collection

Firstly, a survey of existing literature was conducted, taking the following mediums into consideration:

- books
- journals – academic and popular
- research reports
- reviews
- evaluations
- theses
- conference papers
- statistical information including government publications and official statistics: government policies and strategies, national statistic reports, research reports.

Both published and unpublished materials were studied to gain a full understanding of the context of the issue. This facilitated a balanced perspective and not one skewed by the perspective of those participants who had contributed to the research, most of whom generally expressed a complete support for the adventure sport industry and associated communities. This was further discussed within the literature survey in Chapter 2.

Additionally, media sources, including blogs, television documentaries, online news, social media, and print media, were also studied and taken into consideration when

conducting the analysis. Emerging documentation was monitored throughout the duration of the study.

4.2.2 Phases ii, iii, iv, v and vi of Data Collection

Data were collected using a mixed methodologies research model which is outlined in Table 4.2 below.

Table 4.2: Summary of research methodologies implemented during (Phase 2) the data collection phase.

Qualitative methods	Quantitative methods
Auto-ethnography Ethnography Interviews Narrative enquiry interviews	Questionnaire Validation survey

During phases ii, iii, and iv, researcher notes (from reflexive journals), observations (including observations of participants), and audio recordings were transcribed and analysed using a grounded theory thematic coding process. Photographic images also were gathered as part of the data collection activities. During the implementation of those methods that involved participatory activity, especially some of the ethnographic methods, when the researcher participated activities in alongside other adventure sport participants, it was found to not always be possible or practical to make notes or recordings of events. Researcher notes were made as soon as possible after the event, and photographs were identified as an excellent method of recording the activity, and being used later to reflect upon and recall specific details of an event from. Photographic images were also used to to consider body language, emotions, the environment, group size, etc. A WordPress blog was created by the researcher

and used as a transcript tool, a reflective journal, and also to communicate with others with an interest in adventure sports. During the qualitative phase of data collection, the following environmental factors were taken into consideration:

- the mood of both the researcher and others; changes of mood during the duration/course of participation (Rickly-Boyd, 2012); changes based on environmental changes (for example, weather, terrain, degree of exposure, degree of technicality).
- what clothing participants were wearing and what kit they were carrying; reflecting on the appropriateness of such for the particular adventure sport activity being participated in, the environment, the conditions, the duration of the activity.
- how the lead member of the group communicated (verbal and non-verbal) with other members of the groups; individually and as a collective, and noting changes as they occurred throughout the day – observing and recording patterns relating to environmental factors that may have prompted changes in the leader’s communication style.
- how members of the group reflected throughout the duration of the activity; post-activity, and reminisced about past/other experiences.
- considered the types of foods participants consumed; how this was packaged; how accessible it was; was it easy to consume; if it caused any problems or distress, and compared differences between approaches implemented by experienced and novice participants, for example, how easy it was to eat a particular item while participating in winter hill walking during periods of poor weather (high winds, rain, etc).

- specific issues raised by members of the group; for example; relating to clothing, temperature, bathroom needs – and the impact this intervention may have caused to other members of the group, including the lead member.

The second phase of data collection methodologies were informed by the results of the analysis of those data that were collected during phases ii, iii, and iv. The second phase of data collection set out to gather quantitative data relevant to the study. In the first instance, a questionnaire (phase v) was used to confirm the findings (identified themes) that had emerged during the qualitative phases (phases ii, iii and iv) of data collection. The questionnaire was distributed using the following channels:

- potential recipients (identified by the researcher)
- those who had contributed to the qualitative phases (phases ii, iii, and iv) data collection
- social media channels
- via adventure sport providers (for example, the Mountaineering Council of Scotland, Scottish Mountain Rescue, the West Highland College)
- local businesses and organisations with an interest in adventure sport
- media channels (for example, blogs, and on and offline popular media).

Secondly, in order to confirm findings from the questionnaire (phase v) a validation activity (phase vi) was conducted. Findings from the questionnaire were then translated into firstly, a descriptive narrative, and then grouped into a listed series of user requirements. Each user requirement was further distilled into unique

components reflecting elements that may be considered important and/or desirable to adventure sport participants.

The descriptive narrative, user requirements, and components of the user requirements, were explored and discussed with a smaller sample of adventure sport participants by means of a validation activity (phase vi). Twenty-seven adventure sport participants were approached and asked to complete the validation activity (phase vi). Of those approached, twelve responded and engaged with the process. The sample was selected from participants who had already completed the questionnaire and had indicated an interest in contributing to further aspects of the study.

Data collection phase (Phase 2) of the study

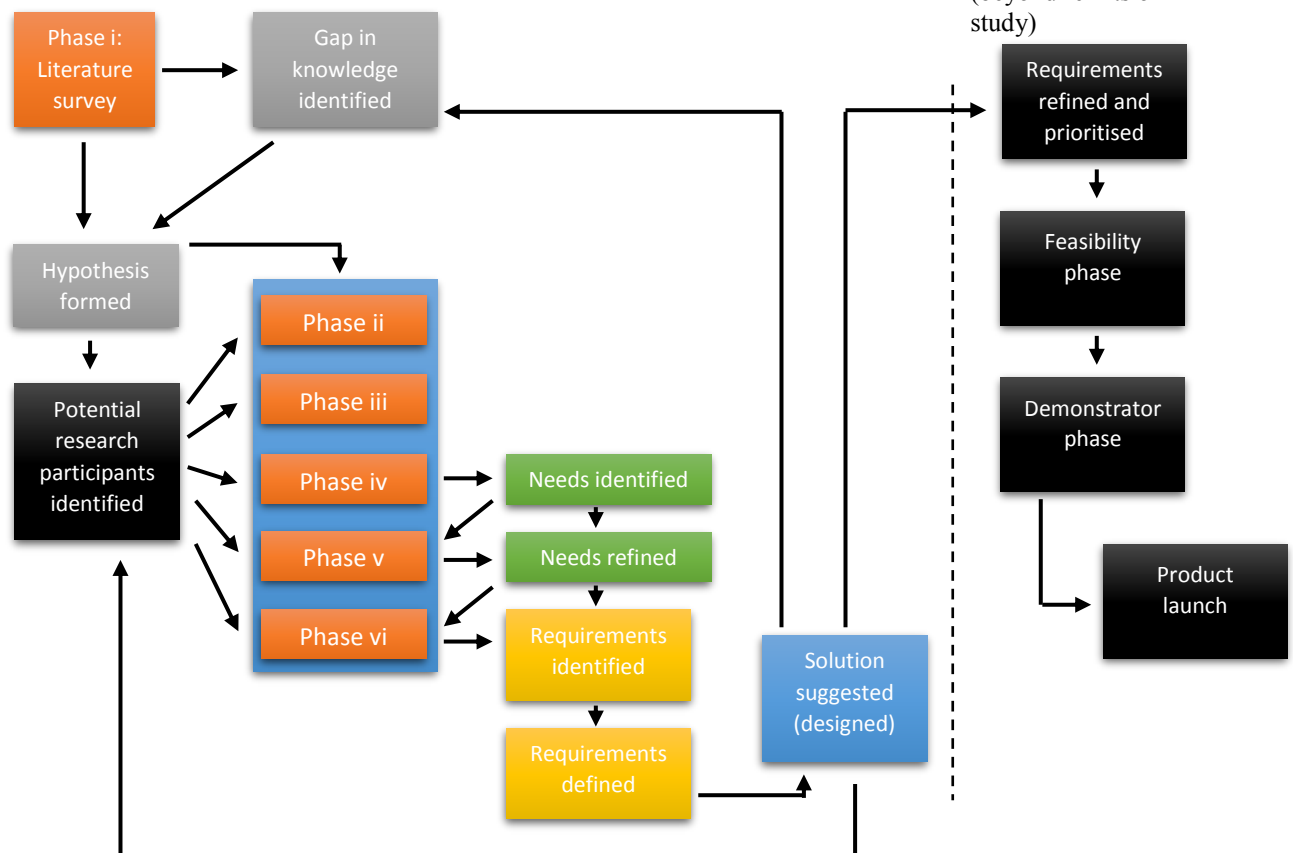


Figure 4.1: Overview of the data collection process and anticipated post data collection activity.

The benefit of taking this multi-tiered, six-phase approach is that it allows potential end users to be involved in all but one of the data collection activities that are implemented during the course of the study, therefore, allowing end users to be involved at all stages of development by directly informing each phase, in an iterative manner, and to be provided with the opportunity to review and confirm the findings. In the case of this study, the findings emerged as a series of themes (or problems) that could be used to formulate the set of user requirements, and components of user requirements. This approach allowed those adventure sport participants with an interest in the industry and community, and also those who wish to become adventure sport participants the opportunity to discuss the findings in detail, and have them elaborated on where necessary. Doing this allowed the intended end users the opportunity to provide feedback on whether each user requirement, and component of, had been identified correctly and accurately. The specifics of the user requirements, and components of, can be further explored and lend themselves to producing a more accurate output. This allows problematization, design thinking and ideation to be applied on a cross-discipline basis and to inform the process, allowing for a more user-appropriate solution to emerge that could respond to the themes identified by the study. In asking appropriate end-users to validate the themes (or problems) that emerged earlier in the study, it was possible to gain their opinion in respect of a confirmation that the suggested response was appropriate response for the identified themes.

This same process (i.e. the research model) has potential to be useful in exploring different hypothesis which have emerged, or are in the emergent phases, within other academic and industrial disciplines, including cross-discipline contexts. The model

also has high transferable values; these could be especially useful for exploring particularly complex lines of inquiry and those which may not be simple and/or straightforward to, in the first instance, fully understand, and secondly, that require a more in-depth understanding that explores values that are beyond those visible on the surface. It should be noted that this process is time-consuming and labour-intensive to implement (in some cases, very much so). Additionally, the researcher is required to have an existing interest in the topic that permits them to bring a degree of personal experience and knowledge, perhaps also passion, to the study.

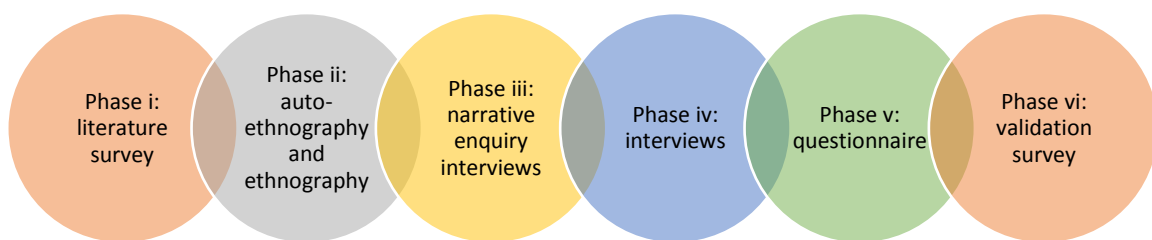


Figure 4.2: Six phase multi-tiered mixed methodology data collection approach.

It is anticipated that further stages of refinement would be required if the proposed response (i.e. solution) was intended to be developed in the future, beyond those stages discussed within this thesis, i.e., during a feasibility-style phase, and prior to the demonstration, and launch phases. These further stages of the design and development process are outlined below:

- refinement of the user requirements, and components of, so that the final set of user requirements only includes those user requirements that are of interest to adventure sport participants (i.e. they would make use of them).
- follow up consultations with a sub-group (targeted sample) of adventure sport participants (end users).
- identification of how interesting specific user requirements, and components of, are to different adventure sport participants based on their skill level.
- prioritisation of user requirements, and components of, to establish which of the user requirements are of the most importance to adventure sport participants as potential end-users.

Figure 4.1, above, illustrates how the necessary post-study activity links to the activity conducted during the course of this study.

4.3 Analysis of data collected

Data collected were analysed as a two-phase activity; firstly, the qualitative data, collected during phases ii, iii, and iv, were analysed and findings used to inform the quantitative phase (phases v and vi) of the study. Once all the data were collected from phase vi, an analysis was conducted, and findings from the validation activity were recorded. Finally, all collected data were analysed for a second time. However, for this phase of the analysis process all collected data were analysed from the

perspective of how it informed each phase of data collection, and how the data informed the findings and outcomes of the study as a whole.

Following completion of qualitative data collection during phases ii, iii, and iv, raw data were extracted from all collected data sources including audio transcripts, transcribed notes, handwritten notes, memos and photographs. Raw data were analysed using a theoretical sampling process whereby collected data were read and reread until initial theories started to emerge (Draucker et al., 2007). Once initial theories began to emerge it was possible to begin a process of grouping phrases, reflections, quotes, and concepts.

Following a thematic coding process similar to that discussed by Glaser (1967), the raw data were saturated, and grouped theories were exhausted for comparison, until it became clear that no further groups of theories would begin to emerge. The analysis process then progressed to the next phase; descriptive coding. During the descriptive coding phase grouped themes were analysed using a less abstract process than the initial analysis of raw data, and instead focused on searching for emerging interpretations and descriptive patterns (Glaser and Laudel, 2013).

Once the grouped theory data were exhausted and no further descriptive codes emerged, the descriptive codes were surveyed for duplication and almost, or close to, identical meaning (Saldana, 2009), for example, different phrases that have the same meaning or interpretation. Duplicated data were removed from the list of descriptive codes. This resulted in a data set of more than two hundred unique descriptive codes.

At this stage, a break of almost a month was taken from the data analysis, and a period of time was allowed to elapse. This allowed the researcher to remove herself temporally from immersion in the data and data analysis, and for a processing of the data to occur (Thomas, 2010). At this stage, early interpretations began to form that demonstrated potential to feed into the next (quantitative) phase (phases v and vi) of the data collection phase of the study; these initial interpretations were noted and were later drawn upon when formulating the content for the first phase of the quantitative phase of the study – the questionnaire. A further break of approximately two weeks was taken from the analysis process prior to repeating the process of analysing the raw data for grouped initial theories, as was the process of extracting descriptive codes from the grouped theories (Braun and Clarke, 2006). The second set of findings was compared to the first to ensure no critical elements had been overlooked during the first round of analysis. This approach draws influence from the underpinning hermeneutic and heuristic phenomenological theories which were considered throughout the study.

Descriptive codes were then carefully analysed for concepts, relationships, common links, themes, terms, similarities, and differences (Draucker et al., 2007). In the first instance, a process of central coding was implemented in that sentences, phrases, and whole paragraphs that had been extracted from the raw data were analysed for emerging themes that were more focused than the descriptive codes and were of interest to study. The relevance of discrete incidents was also taken into consideration; for example, objects, events, actions, and ideas were noted and considered as part of the analysis process (Pace, 2012). Those identified as being

significant to the study were also used to inform open codes which resulted from this phase of the analysis process.

Once again, and prior to finally defining the open codes, a break of two weeks was taken from the analytic process. The process was then repeated using a second round of analysis of the descriptive codes. The second set of findings was compared to the first to ensure no critical elements had been overlooked during the first round of analysis. Additionally, codes were assessed for duplication, and any duplicated codes were removed.

On completion of analysis of the descriptive codes, a data set of six unique central codes considered to be of significance to the study were identified. In order to complete the analytic process central codes were analysed for commonalities; this allowed the very focused process of theoretical coding to take place where relationships are identified which relate to the central codes, and can be traced back to the descriptive codes, extractions from the raw data, and finally the raw data itself (Glaser, 1967). This process of selective coding ensures that data with no relevance to the study can be extracted and eliminated, and allows attention to be focused on those concepts, theories and ideas that are considered to be of relevance to the study (Draucker et al., 2007). For the purposes of this study, the themes were intended to identify changes and resulting problems that may be occurring within the adventure sport industry and associated communities.

During this final stage of analysis of the data collected during the qualitative phase of the study, three key theoretical codes emerged and were identified as being the most relevant to the study.

Interview and narrative enquiry participants were invited to view draft and final versions of the analysis for their interest, to make comment and/or to provide feedback on; all declined.

Figure 4.3 illustrates a summary of all three levels of codes (descriptive, central and theoretical) that were extracted from the raw data. A number of attempts were implemented in order to produce a successful visualisation of the extracted data, and to communicate these in a manner that clearly demonstrated the relationships occurring between each of the codes. Early efforts to visualise the codes were considered unsuccessful because they did not communicate the data in a manner considered appropriate or sufficient. Additionally, working with such a large number of descriptive codes posed challenges in terms of visualising the data in a way that was reader-friendly, and that could be read and translated easily into meaningful information. It was also important that all of the codes were grouped together on one page, for the purpose of completing the analysis and also for use as a data set. Figure 4.3 was initially felt to be an appropriate enough visualisation because it demonstrated all codes on one page, and the relationships between such, while also demonstrating, in one place, the significant body of codes that had been extracted from the raw data.

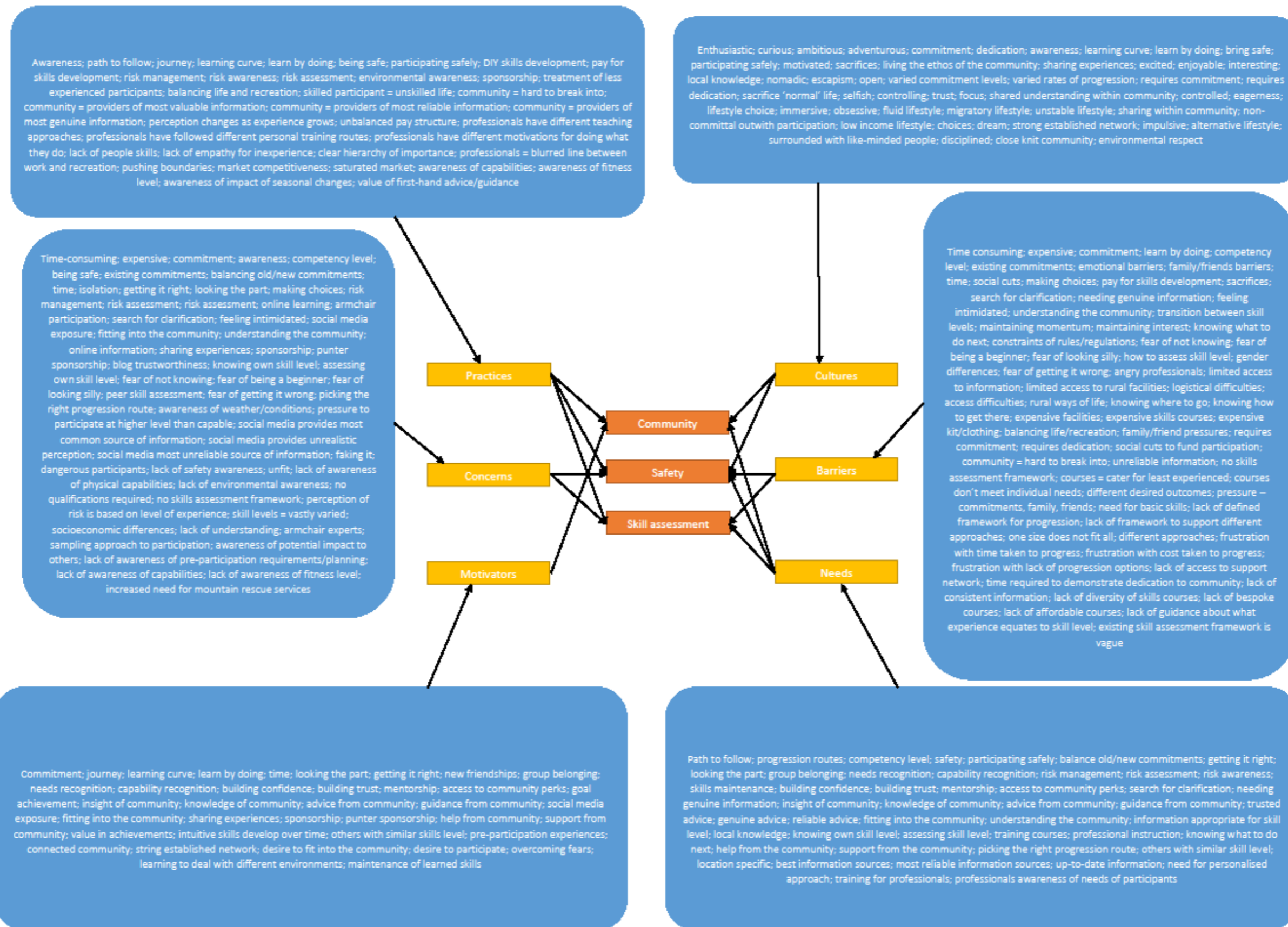


Figure 4.3: Overview of all codes from analysis of qualitative data.

Following further consideration of the visualisation, as presented in Figure 4.3, it was decided that this format did not fully represent the complexity and richness of relationships that had been identified during the analysis. Nor was the information easy to interpret when presented in this way. As such a further phase of analysis was required. It was anticipated that conducting another phase of data analysis would permit a greatly refined, and much more succinct set of data to emerge.

Data from Figure 4.3 were transferred to a new data analysis sheet and analysed using a similar approach to that which had originally been applied to analyse the first sets of collected data. It was not felt that a different approach would be more appropriate because the process taken had been successful in identifying codes appropriate to the study. This activity was undertaken in order to further distil the descriptive codes into a more manageable set, and to better illuminate the relationship between the each of the codes and how the descriptive codes informed in the first instance the central codes, and in the second instance how the descriptive and central codes informed the theoretical codes.

Descriptive codes were analysed for commonalities with each other and grouped appropriately. Of the grouped codes those which demonstrated a relationship with more than one central code were extracted and attached to the appropriate central code. This process allowed the most significant descriptive codes to emerge, and resulted in a reduced data set of descriptive codes – from more than two hundred to sixty. Even though sixty unique descriptive codes are still a significant number to

manage (and communicate to others), an effort was made at this stage to develop a visual representation of the data.

Figure 4.4 illustrates the final findings of the qualitative phase of the study. The first column shows the descriptive codes, the second column shows the central codes, and the third and final column shows the theoretical codes. These findings were used to inform the next data collection phase of the study.

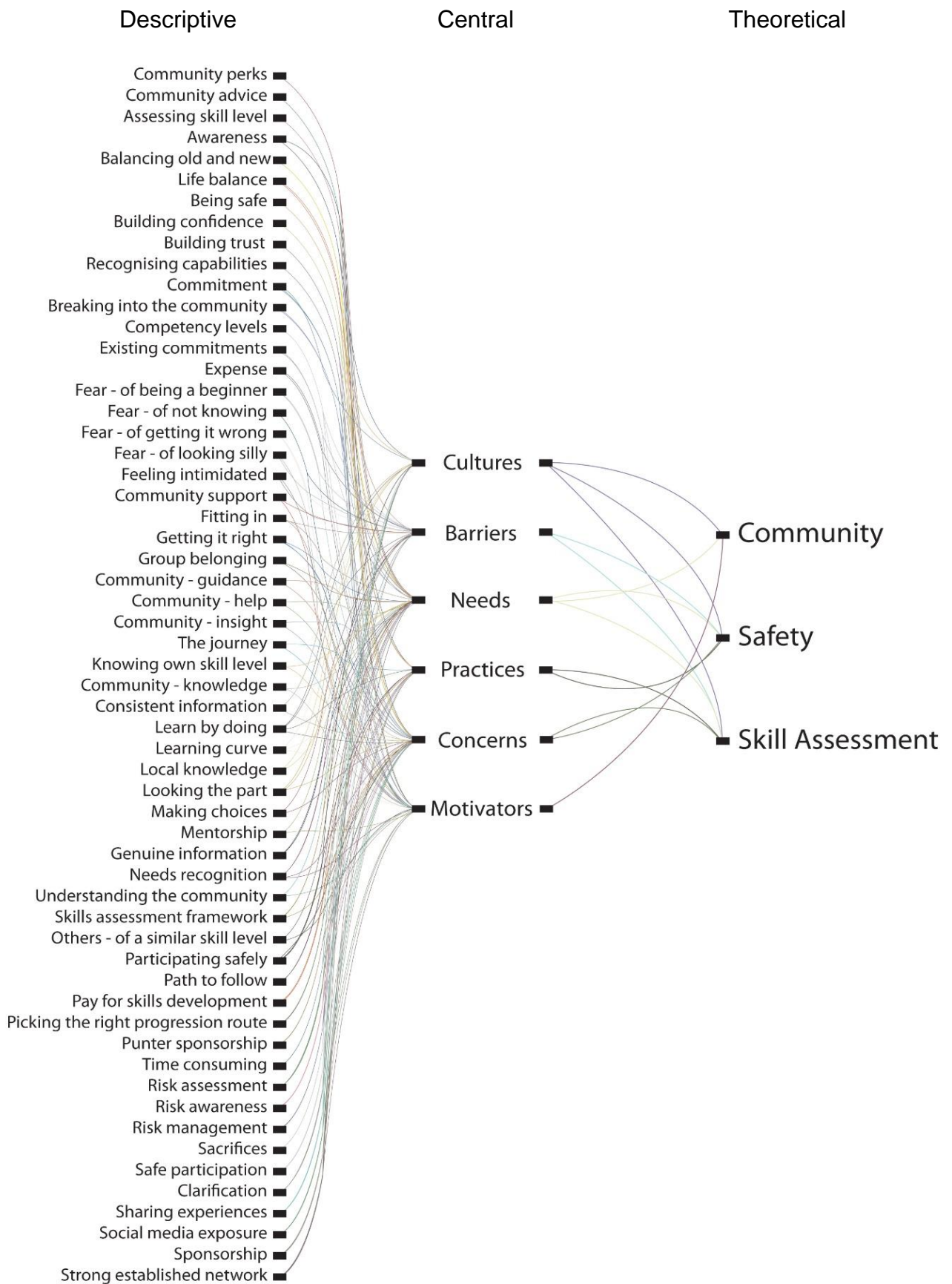


Figure 4.4: Findings from analysis of qualitative data illustrating descriptive codes, central codes, thematic codes and the relationships between them.

In the first instance; the codes, illustrated in Figure 4.4, were used to form a list of elements, effectively user needs, which may be of interest and/or desirable to adventure sport participants. The rationale for formulating this list was to identify a response to those themes identified as being missing or lacking from current provision that is offered by some providers from within the adventure sport industry. In order to formulate an accurate list, literature was resurveyed and a survey of relevant on and off line materials was conducted. Findings from this were compared to the first draft of listed user needs. The list was reformatted and any elements that were found to already be addressed, or as having potential to be address by others were extracted. Any duplication identified from the work of others was removed and excluded from the final list of elements (user needs).

Table 4.3 outlines the final list of elements (user needs) identified during the study as potentially being of interest and/or desirable to adventure sport participants. For the purposes of the study, and from herewith, these elements are termed user needs. Table 4.3 provides a description of the user needs, and examples of how these might be used. The first column outlines the user need reference, the second identifies the user need, the third provides a description of the identified user need, and the fourth column provides examples of how the user need might be used by an adventure sport participant.

Table 4.3: Summary of user needs identified following analysis of data collected during phases ii, iii, and iv of the data collection phase (Phase 2) of the study.

Identified user needs

Ref	Need	Description	Example of use
U_N1	<i>Information about adventure sport activities</i>	What activities are available, Locations, How to access, Reliable/trustworthy information about weather/conditions/equipment/etc.	Implemented as part of activity planning process, Awareness raising, Deciding which activity to participate in
U_N2	<i>Information about adventure sport locations</i>	Where to participate based on activity and skill level, What to expect in different locations, What facilities are available	Implemented as part of the activity planning process, Deciding where to go
U_N3	<i>Ways to build relationships with other adventure sport participants</i>	Based on location, Based on activity, Based on skill level, Assess to community information, Access to beta information, Ways to share experiences, Links to other community members	Making new contacts (social networking), Awareness raising
U_N4	<i>Information about how to develop adventure sport specific skills</i>	Most appropriate skills courses for level/needs, Where skills courses are (locations), Links to different skills providers based on needs, Guidance to select a skills course, What to expect from a skills course	Learning new skills, Developing existing skills, Identify where to access appropriate provision, Identifying gaps in the market for new provision
U_N5	<i>Ability to monitor adventure sport participation and progress</i>	Facility to record activity, Facility that matches ability to participation options, Framework for participation based on individual needs, Information about/suggestions for appropriate progression routes	Recording progress, Ability to identify skill level, Ability to identify appropriate skills provision

Each user need was extracted from Table 4.3 and transferred to a draft questionnaire document. The draft questionnaire (v1.1) was circulated to members of the adventure sport community and to academic colleagues for feedback. Suggestions for amendments were acted upon and implemented where appropriate, with a resulting second draft questionnaire (v1.2) being developed. The questionnaire can be viewed in the appendix section of this thesis in Appendix 5.

Once finalised, and following ethical approval by the University of Abertay Ethics Committee, the questionnaire was circulated to the following individuals and organisations who were associated with, or have an interest in, adventure sport:

- the researchers own contacts identified as appropriate recipients.
- those who had contributed to the qualitative phase of the study.
- social media channels, through organisations such as the Mountaineering Council of Scotland, Scottish Mountain Rescue, the West Highland College.
- local businesses and organisations with an interest in adventure sport.
- through media channels such as blogs, and on and off line popular media.

The user needs identified earlier in the study informed the whole of the quantification phase; once data collection from the questionnaire was completed, and collected data analysed, findings were used to further refine the user needs. The refined user needs informed a series of user requirements and associated components. The user requirements were presented to adventure sport participants during a validation activity. Findings from the questionnaire and validation activity were used, along with

data collected during qualitative phase, to inform the final output of the study. This is discussed in greater detail in Chapter 6. Results from the data collection activities are discussed in Chapter 5.

Chapter 5. Results

5.1 Introduction

The study was conducted as a multi-phase, mixed-methods study which utilised three qualitative data collection methods and two quantitative data collection methods. Taking a grounded theory approach and underpinned using heuristic and hermeneutic phenomenologies, data collection activity was designed in an iterative manner. Each phase of data collection was designed following or toward completion of analysis of the subsequent planned data collection activity, with the exception of the qualitative data collection activities. The interviews and narrative inquiry interviews were conducted in parallel with some of the ethnographic and auto-ethnographic data collection activities, however were not actually designed and conducted before a large quantity of data were collected from ethnographic and auto-ethnographic activity. Findings from all three qualitative methods were used to inform and design the first quantitative method (questionnaire), and findings from the questionnaire were used to inform the second quantitative method (validation activity). Figure 5.1 below provides a summary timeline of each research method implemented during the study.

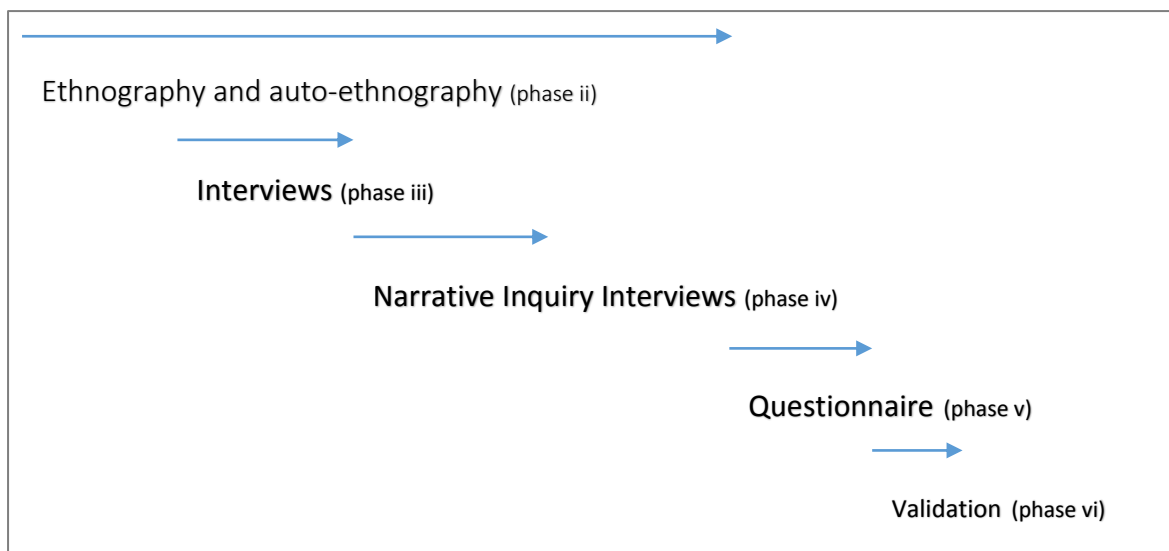


Figure 5.1: Summary timeline of research methods implemented.

Methodologies, data collection, and analysis are discussed in full in Chapter 3, and Chapter 4 respectively. This chapter presents the results of the analysis of all data collected, and discusses the three key themes which emerged, from the analysis, as being of significance to the study.

A total of one hundred and eighteen participants contributed to the data collected by the study. Of these, thirty-six individuals, and six groups of participants (n=43) were involved in the ethnographic and auto-ethnographic data collection activities, where they were observed by the researcher, as well as being involved in participating in adventure sport activities alongside the researcher. There were also more participants who were indirectly involved in the study, in that the researcher observed them and was informed by them, however, they were not recorded as part of the group of direct participants. Two participants took part in the interviews, five participated in the narrative inquiry interviews, thirty-two in the questionnaire, and eleven of the thirty-two questionnaire participants also took part in the validation activity. All of those

participants whose details were recorded, and were considered to be directly participating in the study, consented to their involvement either verbally or in writing. One participant expressed that they wished to be excluded from the study (Narrative Inquiry Participant Three), and one participant (Narrative Inquiry Participant Four) failed to complete and return the informed consent form, and to provide further details (photographs of item of modified equipment). This information was requested from them in order to support the data collected during the narrative inquiry interview. Data collected from this participant was therefore excluded from the analysis, and did not contribute to the findings.

Those participants who contributed data during the ethnographic and auto-ethnographic activities were not requested to provide signed informed consent as the study was observational. All participants were happy to be observed though. In addition, the study was explained to them in detail, including the nature of the study and how the collected data were intended to be used. These participants were provided with contact details to allow them to follow up, obtain more information, or remove their verbal consent if they wished to do so at any point in the future. As such, details of those participants who contributed to the study on this basis were recorded and each participant allocated a unique participant code. However, due to the nature of the methodology itself, specific data from these participants were not used or analysed in the same way as that implemented for the other four research methods. Rather it was reflected upon from the researcher's own perspective. Therefore, evidence from these participants has been used in a different manner within this study and does not identify a specific participant at any point, in the same way that the interview participants and narrative inquiry interview participants are referred to.

Specific motivations for participating in the study were not explicitly explored as a unique strand of the data collection. Participants were generally understood to have an existing interest in adventure sport activities, and participating in such sports. However, during the study it became clear that many of the participants chose to take part in the study because they were actually interested in the research. Some also expressed a desire to be part of developments within something (i.e. the adventure sport industry and associated communities) that they are involved in, perhaps even intrinsically involved. Hypothetically, this could be representative of the fact that adventure sport participation forms part of a lifestyle (Wheaton, 2004), in some cases a complete lifestyle, and also reflective of the fact that adventure sport participants are generally, by their very nature, forward thinking and embrative of change, developments and innovation. Potential for future research that focuses on specific motivations expressed by adventure sport participants in respect of being part of and contributing to research studies about adventure sport does demonstrate potential to form part of a future project to further explore this, including considering how to tap into this interest, and making use of it, for example, in the product development context. In terms of lessons learned from this particular study, this is a line of inquiry that will be built into future studies of a similar nature, if it is appropriate to do so.

Results for the qualitative phase of data collection are discussed in Section 5.2, and results for the quantitative phase are discussed in Section 5.3. From the results, three key themes were identified as problems that are occurring within the adventure sport industry and associated communities. There are: *provision of information; ability to accurately assess skill level and participate safely; and, being a part of the adventure*

sport community. The themes are fully discussed in Sections 5.4.1, 5.4.2, and 5.4.3 of this chapter.

5.2 Qualitative Phase

Results from the qualitative phase of data collection are presented in this section.

The qualitative phase itself was conducted as a three-phase activity:

- i. ethnography and auto-ethnography.
- ii. interviews with adventure sport participants.
- iii. narrative inquiry interviews with adventure sport participants who participated at advanced and/or professional/provider level.

The details of these data collection activities are discussed fully in Chapter 3 (Methods (and application of methods)), and Chapter 4 (Analysis). Results for each individual phase of data collection conducted during the qualitative phase are discussed in Sections 5.2.1, 5.2.2, and 5.2.3 below.

One reason for implementing a qualitative phase as part of the study was partly to test the viability of conducting the study as a wholly qualitative one, making an attempt to avoid using any quantitative methodologies, with of course the exception of drawing upon existing statistics etc. available from literature on subject areas of relevance to, and supportive of, the study. This is not an approach normally favoured by the field of

adventure sport studies. Pernecky and Jamal (2010) suggest this may be because publications that focus on sport related research generally opt to avoid phenomenological discussion (Ritchie, Burns and Palmer, 2005; Veal, 1992). It appears correct that the majority of research in this area focuses on quantifying participant statistics, and using these to predict future trends (SportScotland and Mintel Reports). However, Jennings (2001) discusses the increase in interest in using qualitative methods, and Creswell (1998) highlights issues in respect of reliability of statistics when attempting to develop a clear understanding of issues within any field.

In the early stages of data collection, the perception was that it may indeed be possible to conduct the study by taking this approach. Studies such as those conducted by Holland-Smith and Olivier (2013), Horvath and Zuckerman (1993), and Llewellyn and Sanchez (2008) focus on using methods that can be used to explore perceptions and opinions of adventure sport participants, rather than attempting to provide a quantified analysis about, for example, how often they participate, where they do so, and how much money they are likely to spend when they are there. However, once all qualitative data of relevance to the study were collected, collated and analysed, it became clear that findings from the analysis were not sufficient. There were two reasons for this; firstly, even though data sets were of a significant size (in excess of two hundred unique descriptive codes), they were not sufficient in meeting the objectives laid out by the study. In order to do this, more data were required to be collected. Secondly, the findings did not produce a definitive answer to the research questions, but rather allowed a series of themes to emerge. These themes were problematized (i.e. translated into problems) and were used to form the basis for the design of the next phase of data collection activities to further explore, define and

validate the themes that had emerged. This approach is quite typical to that of a grounded theory research study.

As such, the study evolved to become a mixed-methods study. At this stage it was necessary to return to the initial processes implemented prior to designing and conducting the qualitative data collection. A second tranche of literature was surveyed, methodologies identified, and data collection activity designed. A further sample of participants were recruited, data collected, and analysed. It could be argued that the need for the quantitative phase should have been identified earlier in the study, and based on an understanding gleaned from existing literature, an awareness of the need to consider implementing a mixed-methods research model should have been a conscious consideration throughout. However, since one area of interest to the researcher, and therefore the study, was to explore the viability of conducting a wholly qualitative study, and to establish the possibility of implementing such within a study of this size, it was imperative that all qualitative data were managed prior to any definite decisions being taken in respect of further data collection.

Findings that emerged following analysis of the qualitative data sets suggested that in this instance taking a wholly qualitative approach would not be suitable to meet the requirements of the study. As a result, it was necessary to design and implement further data collection activities, with the focus now being on gathering quantitative data sets that could either support or not support the themes and theories that emerged from the qualitative data sets.

The implications of this were not necessarily anticipated, nor were they considered when the initial framework and timeframe for the study was laid out. There were two reasons for this; firstly, literature indicated conflicting opinions in respect of both the validity of data collected by quantitative studies, and the limitations of these in terms of being able to provide insight into more than things, like how many people take part in a particular activity, the general age groups of participants, and which locations they like to participate most often. This suggests that conducting a quantitative study presented potential to not be able to obtain sufficient data sets that could be used to provide insight into the experiences of adventure sport participants. It was not known from the outset if further research activity would be required, and was therefore difficult to account for this, other than to be mildly aware that it may be a requisite. Secondly, the data sets collected from the qualitative data collection methods became significant in number, and the pre-analysis (before the analysis phase was conducted) indicated that the collected data did indeed present potential to be sufficient.

Once collected data were extracted from transcripts, researcher notes, photographs, etc., and systematically transferred to a datasheet for analysis it became clear that although the data sets were of significant quality, they were not sufficient in order to answer those research questions identified during the study. Rather, a series of thematic strands were identified that could be used as the platform for further data collection. It was anticipated that collecting quantitative data would provide conclusive outputs that could be used to answer the research questions, and thus complete the study. Of course, it would have been possible to write up the findings from the analysis of the qualitative data and present these as the 'study', however, since the study looked to explore changes which are occurring within the adventure sport industry,

and associated communities, to further elaborate on these, and to produce a response to these changes, it was necessary that further data collection was conducted to be able to do this.

The impact of having to implement a second phase of data collection meant that it was necessary to complete the whole research process (literature survey, method identification and design, data collection and analysis) for a second time, and, also to increase awareness of the process required to conduct the data collection activities. As a result, data collection was not completed within the anticipated timescale. This did take longer than it perhaps might have done, had a different approach been identified and implemented at the outset, or in the earlier stages, of the study. That said, the objective to increase understanding of using qualitative approaches within a field that normally does not have a preference for doing so, was achieved.

5.2.1 Ethnography and Auto-ethnography

The decision to become an adventure sport participant can be prompted by a number of different factors. For each individual adventure sport participant, the initial prompt will be, to a degree, relatively unique. It may even be difficult to pinpoint the prompt specifically since it may not occur like a eureka! moment, but rather occur over a period of time and following repeated exposure to the potential of participating in an adventure sport activity. Kerr and Mackenzie (2012) highlight a gap in existing literature about motivations for participating in adventure sport activities that explores reasons beyond sensation-seeking. One of the main motivations, discussed by the

majority of adventure sport participants during the study, was a prompt that came from someone they had an existing relationship with, such as a family member, friend or colleague. In the case of the researcher, she is unable to pinpoint a moment when she considered herself to be a 'participant of adventure sport activities', but rather can attribute the term 'journey' to her personal experience, based on exposure to activities such as mountain biking as a child, moving on to more technical and challenging activities, such as rock climbing and ski touring, as an adult. And this 'journey', in part, relates to the parameters of 'adventure' and the different forms this can take for individual participants based on how often and for how long they have been exposed to the concept of adventure sport, and what they look to gain from being a participant, as well as how they approach participation.

Quite often, the prompt to become an adventure sport participant was indicated, by those newer adventure sport participants who took part in the study, to have come from observing the experience(s) of others (for example, friends or family) that had been communicated through social media channels, for example: Facebook, Twitter, Instagram, whereby an individual who had recently participated in an adventure sport activity shared their experience with their online group of followers.

Online followers are generally (but not always) a group of people known to the person, or with similar interests. The publicity of a particular individual who is present on social media may be public or private. Therefore, followers may be exposed to the sharing of experiences of a person with whom they have no tangible connection, i.e., they do not know them personally – they may not even reside on the same continent, however

it is shared interest or connections in common that can be attributed to bringing them together, albeit virtually. This factor can be related to the *experience economy* effect. Poulsson and Kale (2004) highlight the increased desire and willingness of customers in scouring the globe for exciting experiences that enhance their being. Online resources can assist greatly in doing this.

Following the sharing of experience(s) online, followers may interact with the shared media (which may take the form of, for example, a narrative, photo, short film, or something longer such as a link to a blog post or webpage). They might add a comment of their own, or indicate a 'like' for/of the posted media. This sharing of experiences through online resources, including mobile and smartphone resources, has grown substantially over the past nineteen years to such an extent that a significant number of people across the globe (approximately two billion, and increasing daily) participate in social media on a regular basis (Statistica, 2016). This increased online social media activity could be associated with the emergence of the *experience economy*, and has been an important factor in contributing to the significant growth that has been experienced by the adventure sport industry (Pine and Gilmore, 1999). The majority of participants who took part in this study repeatedly referred to experiences they had viewed on social media channels, such as Facebook and/or Twitter, and discussed sharing their own experiences through these channels. Both positive and negative opinions were expressed about sharing experiences on social media, but it was clear that using these channels was a key factor in prompting people to go out and have their own adventure sport related experiences. This behaviour was observed, by the researcher, to filter through participants of different skill levels, from novice, to intermediate, to advanced, right up to professional/provider

level adventure sport participants. It was clear that online social media was an important tool, for a number of reasons, to the adventure sport industry. Indeed, it was also found, by the researcher, as a useful tool for observing other participants, for communicating with them, and also for learning more about, for example, specific activities, kit and clothing, and locations to participate in activities.

The types of experiences that were observed to be shared via online social media channels, were discussed in both a positive and negative context by other adventure sport participants. In terms of positive; great days of participating in adventure sport activities, images of beautiful and scenic locations, and route information sharing was common. In terms of negative, accidents, reports of bad conditions in locations, and the loss of equipment featured regularly in discussions. The researcher was able to become actively involved in some of these discussions, and noted the benefit of doing so, particularly in terms of developing relationships with other adventure sport participants, and therefore found it a useful method for becoming more involved with the adventure sport community. These communications were also found to be a useful way to learn more about adventure sport participation in general, and was noted to be a very powerful tool for connecting participants, as well as educating them (although the degree of efficacy and validity of the quality of this education could be debated – based on the original source of the information), and learning more about participant behaviours.

Some of the experiences that were shared through online social media channels were discussed with respect and admiration for the ability of the adventure sport participant

who had shared their experience, for example, a rock climber had completed a particularly challenging route. Location was often discussed, and on occasions was discussed as being part of a planning process that was implemented in order to facilitate one's own experience in the same or a similar location. This was especially common when discussing iconic locations, generally renowned by adventure sport participants for the local activity provision, for example, challenging off-piste and glacier skiing in the Chamonix Mont Blanc region. However, it was also common, and this was observed most commonly from those adventure sport participants with more experience and/or expertise, to highlight flaws they noted about the experience that had been shared. This occurred to varying degrees. On some occasions, the comments were critical; the most common criticisms generally focused on how the adventure sport participant (who had shared the experience) presented his/her own ability. Generally, this was perceived as being presented in an elevated manner, and therefore, not reflecting the true ability of the participant in question. The true ability was almost always considered to be lower than that which had been communicated through the experience that had been shared. The researcher found this to be true when actually participating alongside some other adventure sport participants; one example came during a day spent mountain biking along relatively straight-forward off-road trails, however, the location was remote, and the route was lengthy. The other participant generally struggled for the most part of the day, and it was clear they were perhaps not quite as competent as they had communicated themselves to be prior to participating. Photographs posted to a social media site following the event presented the day to be elevated in terms of skills required to complete, and the researcher found her own opinion of this social media post to mirror or reflect those comments about events of a similar nature that were discussed by those, generally, more experienced

adventure sport participants who provided an opinion in this context. In contrast, the researcher also found herself to be in a similar position, and although capable of completing the planned activity, was perhaps not quite as competent as the rest of the group. This permitted the understanding that although participants may be capable of completing a specific activity, it could be that they need to identify the most appropriate participants for them to do so with, therefore allowing them to participate within their own ability and at a pace that is suitable, and indeed enjoyable, for them.

The second criticism most commonly highlighted during discussion with other participants, and this was mostly by those adventure sport participants with responsibilities for providing adventure sport activities to others, such as instructors or guides. Something they indicated experiencing on a regular basis was an issue associated with adventure sport participants (who they usually referred to as clients or customers – since a fee was normally paid the instructor to facilitate participation) who appeared to be unable to accurately assess their own skill level. There was often a particular focus on discussing those participants who perceived themselves to be more experienced, and therefore be of a higher skill level than they proved themselves to be in reality (i.e. when actually participating). The result of this misperception and/or inaccurate assessment of skill level, was that clients would be accompanied and/or guided (led) as part of the participatory experience, and a location/route/activity would be preselected based on the information the client (participant) provided about what they wanted to achieve from the experience. These objectives could include various things such as, skills they wanted to learn or develop, locations they wanted to experience, perhaps even to attempt to spot wildlife they were particularly interested in. These participant objectives would then be coupled with the skill level provided by

the adventure sport participant. In some cases, the skill level of more than one participant was required to be taken into consideration by the group leader, for example, if the activity was booked as a multi-participant group activity (i.e., more than one participant). For some of these group activity arrangements, not all members of the group would have been known to each other prior to participating in the adventure sport activity itself, for example, if the skills course was booked through a provider on an individual basis, to allow lone travellers and small groups to join a larger group. This could be a preferred option for some participants, particularly novice adventure sport participants, since doing so generally results in a reduced cost impact in comparison to the cost that would be incurred by an individual or small group of friends had they chosen to hire the personal/private services of a professional/provider. Participants who chose to join these organised skills courses/groups, were highlighted, by the professional adventure sport participants, as being responsible for assessing their own skill level at the time of booking. And this was observed by the researcher to be true to practice implemented by professionals across the industry. However, there is little in the way of existing guidance about the most appropriate method(s) for doing this. The information and guidance that does currently exist was surveyed extensively during the course of the study. What is available was found to be patchy at best, with no evidence of a pan-best practice guidance that is, or can be, implemented and/or shared across organisations, providers, and individuals, who have an interest in adventure sport participation and/or provide a service to adventure sport participants. When the researcher undertook a period of attempting to define her own skill level, she found this to be a particularly challenging thing to do. For this endeavour, rock climbing was used as the case study and various factors were taken into consideration, including things like how long she had been participating in this

particular activity, which other participants she had participated with, the locations she had participated in, the grades of climbs she had completed, and even the appropriateness of the kit, clothing and equipment she owned. The researcher found that based on this, her skill level could be variable from one day spent rock climbing, to the next. She recalled events when a specific rock climb was a real struggle, in terms of how technical it was, the condition of the rock, the exposure and location of the route, the weather conditions - even the person she was climbing with had potential to have an impact on how difficult this event was remembered to be. In contrast, she recalled events when she excelled and performed beyond what she had previously accomplished, and even recalled events when other participants had looked to her for advice. These data were compared to other participants during periods of observation. This was found to be a difficult method for producing an accurate outcome – different participants displayed different styles and approaches to rock climbing. A verbal survey was conducted whereby other rock climbing participants were asked to ‘rate’ the skill level of the researcher, and again the response to this was varied, in fact, it was assumed that many responses were provided in the most positive manner possible, which does demonstrate potential community spirit and the desire to encourage other participants, but did not assist the researcher in coming any closer to being able to accurately assess her own skill level, further highlighting the complexity of trying to do so, particularly for a more novice adventure sport participant.

Following a survey of available skill assessment guidance, it was found that organisations generally suggest that adventure sport participant skill level can be assessed based on existing participatory experience. For example, the number of days of participation in a particular activity was a common indicator used to allow

adventure sport participants to assess and allocate skill level. Since there is no existing framework in place to allow a participant to accurately assess their own skill level in advance of taking part in an adventure sport activity (other than counting the number of days they have participated in an activity), most participants reported implementing a self-assessment process. Similar to the approach implemented by the researcher when attempting to assess her own skill level, this involved the participant conducting a reflection of his/her own experiences, and using this information to allocate themselves a skill level. In some cases, the experiences of others were reported to be used and a process of peer-comparison was implemented. In this case of a peer-comparison being conducted, the participants indicated that they reflected on their own previous experiences, and compared it to that of other adventure sport participant (usually others who are known to them personally, for example, friends) to allocate themselves a skill level – a sort of peer-assessment style process, however, the baseline for this is obviously vague. It was observed that males generally over-estimated their skill level, and females generally under-estimated (Rickly-Boyd, 2012).

Professionals/providers reported implementing a coupling process (however, they did not refer to it using this term), whereby they took into consideration both the desires of the participant(s), and the skill level reported by the participant(s). This information was then used, alongside other factors such as, weather, environmental conditions, and timescale allocated to a particular activity, to assist in identifying the structure of the actual participatory activity would take. In the event that a group of participants were collectively taking part in a particular activity at the same time, the skill level of the least experienced member of the group was reported to be the level that was used upon which to base any decisions including things like selecting the most appropriate

location and, the hardest graded terrain (land and water) to be covered during the activity.

This coupling procedure was found to be common practice across the professional/provider level of adventure sport participant when they were facilitating activities with adventure sport participants of a lower skill level. The procedure was not found to be indigenous to any one particular organisation, activity (for example, climbing, kayaking, skiing), or geographical location. In the absence of a framework or guidance that allows for the accurate assessment of an individual adventure sport participant to be conducted, the professional/provider therefore relies upon an honest, genuine and accurate assessment of skill level to be provided to them from the participant. However, since this coupling procedure was found to be a pan-practiced procedure, implemented by adventure sport professionals/providers across the industry, it does demonstrate potential to be considered as a platform or starting point for developing a best-practice approach that can be used to accurately assess participant skill level.

Occasions of adventure sport participants being unable to accurately assess their own skill level, which, over time, were observed on such a regular basis that a clear theme emerged; professionals/providers reported facilitating activities with participants who failed to act in a manner reflective of the skill level they reported. One specific theme that was regularly narrated related to winter mountaineering activities in Scotland.

Winter mountaineering in Scotland was highlighted as being an increasingly popular adventure sport activity, with growing participant numbers (Scottish Mountain Rescue, 2012), and a notable trend of adventure sport participants using opportunities to participate in winter mountaineering activities in locations in Scotland as a platform to prepare them for high mountain (e.g. Alpine, Himalayan) adventure sport activities of a similar nature. This increase in popularity was reflected in a decision made by the Mountaineering Council of Scotland (MCofS) to host a series of 'Winter Safety Lectures' across a number of locations in Scotland. The talks were presented by an adventure sport professional/provider who is also a leading representative and active volunteer of the Scottish Mountain Rescue Service. The talks were first hosted in winter 2011, and the organisation continue to host the talks with further series having been planned for the 2015-2016 winter season. The researcher attended one of these talks (in Edinburgh) as a part of the research process, and found it to be a very useful offering, being openly available to adventure sport participants.

Generally, winter mountaineering involves participating in activities similar to those adventure sport activities that are available in Scotland during the summer months, such as, walking, rock scrambling and rock climbing. However, there are differences based on, for example, environmental conditions and the equipment that is required, and some of the necessary skills can be significantly more demanding than those required for the same types of activities participated in during the summer months. For example, hill walking in winter demands significantly advanced navigation skills than those required for hill walking in summer, since there is an increased possibility of having to navigate a route in poor visibility (e.g. thick fog, heavy rainfall, snowfall, hours of darkness); furthermore, the ability to use an ice axe safely and efficiently is

necessary in winter, whereas this skill would not normally be required during the summer months.

This increased participation in winter mountaineering activities can be attributed, as previously discussed, in part to both the *experience economy* effect (Pine and Gilmore, 1999), and increased frequency of adventure sport participants sharing their experiences through online social media channels. Rates of interaction with, and interest in, online social media appeared to vary across the participant spectrum. Some participants reported daily interactions, others less so. It is anticipated that there is potential for these varying levels of interaction to have an additional impact on how an individual adventure sport participant perceives his/her skill level to be. This theory requires further definition and research, both being beyond the remits of this study, but do present an interesting opportunity to form part of a future study.

In terms of winter mountaineering in Scotland, professionals/providers regularly expressed negative opinion toward the number of adventure sport participants who they encountered who they felt did not meet the necessary requirements to safely participate in some or all of the activities that those participants perceived themselves to be capable of. On occasion this opinion was expressed quite strongly. Additionally, a degree of negative energy was often felt when the professionals/providers narrated particular experiences and recounted the series of events that had occurred.

On one occasion an inaccurate assessment of skill level was experienced by the researcher on a first-hand basis, during a winter climbing expedition in Scotland. The

activity was guided by a professional/provider level adventure sport participant, was undertaken as a group of three, and the intended itinerary was to be a graded winter climbing route, requiring the use of specialist winter/ice climbing equipment. The professional/provider took the lead role of the group, and was the first member of the party to ascend the route, the second two participants ascended on an alternating second and third climber basis. The weather conditions were favourable and the route was in such a condition that an easier grade of winter climb was permitted than that which was documented in the area specific specialist guide book that was used as part of the planning process and referenced by the group ahead of participating in the activity itself. The reason the route was of an easier grade was because recent heavy snowfall had resulted in the route being covered in a thick layer of fresh snow. Steep snow is generally easier to ascend than steep ice, providing the snowpack is not prone to avalanche, at the time of climbing. However, these type of conditions on a route can also make the route more challenging in terms of placing gear and protection (ice screws, rock nuts, slings, ropes etc.). This is because fresh, powdery snow is not always favourable for attaching things, such as ice screws, to. Nonetheless, the climb was approved by the professional/provider as being suitable for all members of the climbing party, and this decision was made based on the information provided by both adventure sport participants about their skill level and previous, relevant experience.

During the winter climb, approximately at the mid-point of the route, the party were forced to wait in line behind another party who had begun ascending the route earlier in the day. The party climbing ahead were not ascending as efficiently as the researcher's party. This type of event is not uncommon when undertaking winter climbing activities. As a result of the time spent waiting, environmental conditions

began to deteriorate, albeit marginally, in that wind speed increased, and air temperature was reduced as a result of the increased wind speeds. Additionally, the level of daylight began to fade; there are limited daylight hours in winter in Scotland, and this is especially true in the far north of the country – where the winter climb was taking place. Neither factor should have presented cause for concern for any member of the group because of their skill levels and existing experience which they indicated before embarking on the activity. Additionally, all members of the group confirmed they were carrying the necessary equipment to continue participating during hours of darkness if it became necessary to do so (i.e. head torch). However, the member of the party least known to the professional/provider began to demonstrate behaviour that was not aligned with their skill level which they had communicated possessing before commencing the activity. The participant began to make mistakes, and took action that presented potential to be considered as unsafe and risky. They also began to express a desire to ascend the route faster, and effectively rush the process – something which could have potential to have serious impact on all members of the party. Although the participant did not make any verbal expression(s), it was clear from how they behaved that they were uncomfortable, and were presenting themselves in a manner that did not align with the skill level they perceived and had self-assessed themselves to possess.

Following completion of the activity, which took significantly more hours than anticipated, the participant expressed, both verbally and non-verbally, a range of feelings such as exhaustion, urgency, and fear. It became very clear that this particular participant was indeed not in possession of the skill level which he perceived himself to be, and had reported to the professional, in terms of both mental and

physical ability relating to this particular type of adventure sport participation (winter mountaineering).

In addition to this specific experience, there were numerous other occasions when the researcher participated in activities alongside others who, it became clear, were not fully comfortable with the environment, nor were they fully equipped in respect of skill level and experience to securely deal with particularly challenging situations. Although there were no further first-hand experiences similar or the same to that of the winter mountaineering experience, observations were recorded about other participants expressing similar types of emotions, feelings and actions – both spoken and unspoken, for example body language, facial expressions, etc. These observations aligned with narrative accounts provided by professional/provider level adventure sport participants about their own experiences of facilitating activities with participants who had inaccurately assessed their own skill level.

During the study, none of the professionals/providers ever discussed any action, taken by themselves or others, that involved approaching the adventure sport participant, who had caused the concern, to highlight the issue to the individual participant. Nor was it discussed that any action was taken, or planned to be taken, in order to ensure the same did not happen to them, or colleagues, at any point in the future. It was also noted that there was no evidence of any form of recording system or database in existence to allow professionals/providers to document participant skill level, either for present or future use by themselves or others.

These themes (i.e. problems) that emerged focus on two connected strands: participant skill level, and safe participation (in general). These themes were further explored during conversations with professionals/providers including those responsible for safety management, such as providers of mountain rescue services, and medic-style (first aider) volunteers at adventure sport events, including the increasingly popular endurance, long-distance and ultra-distance style events which take place in remote and rural (including mountainous) locations. Increased pressures on such services, which are normally volunteer-facilitated, were highlighted. The same is documented in industry publications that focus on statistics and figures recorded about the number of mountain rescue efforts, and the outcomes of these.

Specific reasons for the increase in mountain rescue figures are not documented and/or evidenced. This can be, in part, attributed to the way that individual rescues are recorded. Not all reasons for a specific mountain rescue call out are evidenced, and the outcome is not always recorded. Additionally, the skill level of the victim is not always recorded (Scottish Mountain Rescue, 2014 and 2015). However, it is generally assumed that the increase in mountain rescue callouts may be attributable to the increase in adventure sport participation, and indeed an increase in adventure sport participants who are not in possession of the appropriate and necessary skill levels to participate in certain activities and environments. This does suggest strong potential to explore approaches addressing this issue, including consideration for methods that allow adventure sport participants a way of accurately assessing their skill level by taking a more structured approach to evaluating and recording skill attainment levels.

5.2.2 Interviews

Two of the semi-structured interviews that were conducted with regular adventure sport participants, both female, were considered extremely informative to the study. The decision to focus on female participants was because males are the more dominant gender represented in most existing literature on the topic. Breivik (2010) suggests that more and more females are becoming interested in participating in adventure sport activities, and it was considered to be important to take this increase into account and learn more about the 'minority' female group. Additionally, the perceptions of male adventure sport participants were considered during other the other data collection methods implemented during the study. The interview participants were selected from a selection of five potential participants. The process of selection took approximately nine months. It was anticipated that the process would take perhaps two or three months, however, due to logistical reasons and the time taken to agree a date for the interviews to take place, the whole process took longer than anticipated. The selection process effectively contributed to the qualitative data collection phase as a whole; this is because in addition to the interviews proper, the period of monitoring potential interview participants assisted in informing the study, in terms of direction and the lines of inquiry that may be worth pursuing. It was not initially the intention to spend any specific length of time monitoring the potential participants, however, doing so allowed for observatory data to be collected that informed the content of the interview questions. It also allowed for a better understanding of adventure sport participants to be formed ahead of conducting the interviews proper, and therefore allowed the interview process to be conducted with a higher degree of informed knowledge driving the questions and process, but also assisting in the

formation of 'in the moment' type questions, which may not have evolved had such degree of time been allocated to the selection process.

During the nine-month selection process it became clear that the length of time (i.e. days, weeks, months, years) spent being an adventure sport participant does not necessarily reflect the participant's skill level and/or experience gained, even though these are the criteria most commonly suggested by adventure sport providers in order to assess such skills. There were a number of recurring reasons observed for this:

1. The participant relies on another (participant) to take part (participate) in an adventure sport activity. This point itself can be further distilled. Firstly, the particular adventure sport activity requires a second person (participant) in order for physical participation to actually occur, for example, rock climbing generally requires a party of two people, and secondly, the participant prefers the company of another when participating (this factor can also be split into individual component related factors, including fear and lack of confidence, however, exploring such was beyond the remits and timeframe of this study). This reliance on another adventure sport participant may result in the participant being unable to take part in adventure sport activities as and when they wish to do so. This can work both ways; there may be occasions when the participant is actively searching for another to participate with, and/or there may be occasions when the participant is forced to refuse an invitation to participate with another because of other/existing commitments.

2. The participant has other commitments, which may be existing commitments or may be commitments that emerge during the period of time when the participant considers themselves to be an adventure sport participant. Examples of other commitments included employment, work, study, family, other pastimes or hobbies. The majority of other commitments generally related to other people, time, and finances.
3. The participant was not physically capable of participating at a higher/more challenging level. Examples of this included, not being strong enough to rock climb in particular locations.
4. The participant did not have the technical skills required to participate at a higher/more challenging level. Examples of this included not being skilled enough to ski in particular locations.
5. The participant only participated under the guidance of an expert. Examples of this included participating in an activity on a paid-for training course facilitated by a professional/provider, and/or participating in an activity as part of a paid-for holiday facilitated by a professional/provider.
6. The participant was not interested in particular aspects of the adventure sport activity. Examples of this included not being interested in learning rope skills relevant to rock climbing participation.

Some of the potential interview participants presented themselves as experienced, skilled, and clear about their objectives in respect of participating in adventure sport activities. However, following the periods spent observing them by the researcher, and informal one-to-one conversations, it emerged that regardless of the duration of time (i.e., days, weeks, months, or years) actually spent being an adventure sport

participant, the amount of time spent being a participant did not necessarily give a true reflection of how skilled a particular adventure sport participant was. As previously discussed, duration of time spent participating in adventure sport activities is generally accepted, across the adventure sport community, and indeed within the industry, as an acceptable method of assessment, which provides an indication of skill level. For example, if an adventure sport participant expressed that they had participated in rock climbing activities for six years, it was generally assumed they had six years of solid rock climbing experience. However, the reality may have been less clear-cut. What sometimes emerged was that a more accurate representation was that the participant had taken up rock climbing activities six years previous, but had climbed, for example, once per month during the six-year period. Therefore, meaning they were likely to be significantly less skilled and experienced than a rock climbing participant who had been participating in rock climbing activities for the same period of time, but did so once per week during the six-year period. Rickly-Body (2012) does offer another perspective on this, and suggests that climbing experience is judged (by the rock climbing community) by the number of years spent climbing, and ability assessed by the grade a participant [rock climber] is able to participate. However, this is discussed as something that is a shared understanding from within a very closed community of rock climbing participants who view themselves as “separate from the larger rock climbing community” (Rickly-Boyd, 2012, p. 98), and assuming this approach is applied by a minority group would lead to the understanding that it is not applied generally across those rock climbing participants who take part on a more recreational basis.

This finding demonstrated the high level of complexity involved in assessing participant skill level. From this, an understanding began to emerge about the need for a set of indicators that could be used to assess participant skill level, rather than using periods of time spent participating as the key indicator, which had demonstrated itself to be too ambiguous to be used as an assessment indicator that could produce accurate results. The importance of being able to assess risks associated with participation is discussed by West and Allin (2010) who highlight that being able to assess risk is an indication of competence. Risk in itself can be a complex factor to assess, since the ability to assess risk may not necessarily reflect a participant's ability to act in an appropriate manner even once the risk has been assessed. It is probably more likely that a number of skills need to be possessed by the participant if they are to be in a position where they can assess risk and act appropriately.

The six observations listed above do not provide an exhaustive list of indicators that could be used to identify participant skill level. However, they did provide a series of key indicators that were useful for informing the later phases of data collection (specifically the questionnaire and validation), and demonstrated potential to be used to assist in identifying a solution that could be more successful in assessing adventure sport participant skill level, rather than the existing practice of relying on an assumption of skill level, which was found to be assessed based on duration of time spent being a participant.

Following the period of time spent observing potential interview participants, knowledge was obtained that was useful in informing the content of the interviews which set out to explore two main themes:

- motivations for choosing to participate in adventure sport activities (to allow us to build on studies already conducted such as those by Puchan (2004), Greenwood and Yeoman (2007) and Taylor (2011)).
- experiences related to being an adventure sport participant (to allow us to build on studies such as those previously conducted by Horvath and Zukerman (1993) and Llewellyn and Sanchez (2008)).

It was the emergence of these themes that also assisted in defining the criteria used to select the final set of interview participants. The selection process, interview process, and questions asked are discussed fully in Section 3.2.1.2 of Chapter 3. Analysis is discussed in Section 4.3 of Chapter 4, and findings are presented in Table 5.1 below. The first column provides the unique theme (ID) reference number, the second column provides a description of the theme, the third column indicates which overarching theme the unique finding is headed under, and the fourth column links the ID to the user need which it fed into the development of (see table 4.3).

Table 5.1: Results of analysis of data collected from interviews with adventure sport participants.

ID	Description	Theme	Need ID (see table X)
IR_1	Dispersed information about adventure sport activities including what activities are available and where (location) to access the activities	Information	UN_1, UN_2
IR_2	Lack of reliable information about adventure sport including saturation of information online etc. that is based on opinion rather than fact	Information	UN_1, UN_2
IR_3	Lack of provision of information that allows adventure sport participants to accurately assess their own skill level	Skill level	UN_4
IR_4	Lack of framework that allows adventure sport participants to match their skill level with actual participation including knowing where to access appropriate skills courses	Skill level	UN_5
IR_5	Desire to become part of the adventure sport community and to access the resources (insider knowledge) available to those who are part of the community but lack of knowledge for how to do this	Community / information	UN_3
IR_6	Desire to be part of the adventure sport community while retaining individuality	Community	UN_3, UN_5

5.2.3 Narrative Inquiry Interviews

Five unstructured narrative inquiry interviews were conducted during a period of eighteen months, to explore modification(s) of equipment used to participate in adventure sport activities, as this was identified as a common activity during the qualitative research conducted earlier. Data from two of the interviews were available to be included in the analysis phase. Reasons for the exclusion of some data sets are discussed fully in Section 3.2.1.3 of Chapter 3, however they are briefly summarised

here: one participant withdrew informed consent, one participant had not actioned the modification at the time of the narrative inquiry interview, nor had he done so at the time of analysis, and one participant failed to return the informed consent form and photographic images to support the data (narrative) provided during the interview.

The final sample size could be considered limiting in terms of providing data to saturation point. However, Participant One provided some twelve examples of modified equipment (Appendix 3), reflecting a series of modifications that had been actioned over a number of years (in excess of 30 years), from both a professional and recreational perspective. Therefore, in respect of the total number of samples of modified sets of equipment used for participating in adventure sport activities this was considered sufficient; if each was to be considered on its own merit, then enough samples had been provided to reflect samples that could have been provided by twelve unique participants. This was based on the assumption that one participant would generally discuss one item of modified equipment per interview.

However, to analyse the data as they were presented, each narrative provided by Participant One about the item of modified equipment was not considered as a standalone item, as if the data in respect of such had been collected from different participants. It is highly unlikely that one participant can demonstrate the same level of variation in terms of motivational drivers that would have been gathered had the twelve pieces of modified equipment been presented by more than one participant. It may also be assumed that the analysis may have produced a different set of results had it been possible to consider data collected from all five narrative inquiry interview

participants. Recruiting more participants was considered as an option to counteract the loss of data from three of the participants. However, it was not considered to be critical to the outcome of the study to do so, and it was also not considered possible to action within the timeframe allocated to data collection for this specific methodology.

Therefore, the decision was taken to analyse the collected data obtained from the two narrative inquiry participants whose data were fit for purpose and use within the study. In the event that the analysis produced results that were new and/or different than those that had already emerged from the analysis of the ethnographic and auto-ethnographic data and the interview data, it was anticipated that it may be necessary to reconsider the decision to not recruit more narrative inquiry participants. Similarly, if new and interesting themes emerged, different to those which had already emerged, and were identified as worthy of further exploration, it was accepted that it may be necessary to recruit more narrative inquiry participants to further elaborate on these. If this was considered to be necessary, it was anticipated that the same method used to recruit participants in the first instance would again be implemented to recruit a further sample of participants.

Following analysis of data collected during the narrative inquiry interviews, three key themes emerged:

1. Safe approaches toward adventure sport participation – this referred to both one's own safety, and the safety of others. Modifications had been made in order to make pieces of equipment easier to use, and as a result had increased the safety

of such. Narrative Inquiry Participant One (male, 40's, professional/provider level participant) discussed a number of the modifications that he had made to make the item safer for use:

"...I added a bit of cord [to a rock climbing nut key] ...which means I can clip it to my rope and not drop it ...there is now more modern stuff ...the coil leash ...I've taken it off ...and this can't spring back [like the coil leash]".

"...my crampons, when you get them, it has the strap threaded in a certain direction and all I've done, is I've rethreaded the strap and for me, it's easier to thread it when it's in front of me than when it's round the side of me. ...you end up with a more streamlined system. ...I've sent photographs to the guys that deal with them in the UK ...they've not done anything with it".

"...we don't walk to ice falls from the road [in Scotland], in pristine conditions ...my adaption to the crampons is making my own balling plates ...out of cardboard and duct tape".

2. Being part of a community – this wasn't expressed as an explicit motivator for actioning modifications to items of kit used for participating in adventure sport activities; rather it was something that was discussed generally. Narrative Inquiry Participant Two (female, 30's, intermediate level participant) discussed feeling part of a community and fitting into the community when she was thinking about the effects

the action that modifying a piece of equipment had caused, she also discussed her desire to action more kit modifications in the future. However, she appreciated that she may have to call on the knowledge and assistance of a more experienced adventure sport participant in order for her to be able to carry out the modification, since she did not feel she herself possessed the necessary competencies to carry out all of the modifications she was theoretically planning.

3. Cost of adventure sport participation – the financial cost of participating in adventure sport activities was discussed as one that can mount up quickly, especially considering the necessity to possess multiple items of kit, some of which can be very much activity specific. Narrative Inquiry Participant Two discussed a desire to purchase a specific pair of mountaineering boots. One of her key motivating factors for selecting this particular pair of boots were the aesthetics and colours of the boots. However, she could be classified as a newer adventure sport participant, having taken up adventure sport activities in the last few or so years, and therefore she also appreciated the need to implement balance between existing financial commitments (e.g. mortgage and household expenses) with providing herself with the necessary kit, equipment, clothing, etc. to allow her to participate in adventure sport activities. This balance prompted her to purchase an equally sufficient, in terms of performance and to meet her needs, pair of mountaineering boots for sale at a lower cost (i.e. the price paid was reduced to that of the normal RRP), and to modify them as necessary to suit her needs and requirements.

Narrative Inquiry Participant One also discussed financial cost as a factor that prompted him to action a modification, he describes once such modification, which overlaps to a degree with Point 1 (safe approaches to adventure sport participation):

“...this is a winter thing; this is my Jet Boil [gas cooking pot that packs down into a small tube for mountaineering, expedition style trips etc.]. This one’s had it now, it’s disintegrated, but what I did have on here was a hanging system. It’s not on here anymore, but I just had this cable-tie with a rope and strong underneath. I could hang it up in a snow-hole and cook on it, rather than buying a hanging system. This one cost me probably, 20 pence, or less. [Cost of a new specifically manufactured one] Potentially, I don’t know, £15... if you get bits of wire and that, I don’t know, £15. But this was nothing. And I’ve cut off an extra strap which if you hang over and melt, it actually melted, so I removed a handle, because it was not functioning... it started melting, it collapsed and flopped down into the, where the heat was”.

5.3 Quantitative Phase

Results from the quantitative phase of data collection are presented in this section. The quantitative phase was conducted as a two-phase activity. Firstly, a questionnaire was designed to explore a series of user needs and their components, identified during the analysis of qualitative data as being interesting to adventure sport participants. Secondly, a validation activity was designed to confirm a series of user requirements which had been derived and refined from the list of user needs. The user

requirements were identified, following analysis of the questionnaire data, as being of interest to adventure sport participants. Further refining and elaborating on the user needs was imperative in order to effectively formulate a list of end-user requirements that could be presented as a suitable response and for designing a framework intended to be used by adventure sport participants to address those issues identified by this study. The details of data collection activities are discussed fully in Chapter 3 (Methods and application of methods) and Chapter 4 (Analysis) of this thesis.

Results for each individual phase of data collection conducted during the quantitative phase of data collection are discussed in Sections 5.3.1 (questionnaire), and 5.3.2 (validation) below.

As discussed earlier in this chapter (Section 5.2), the researcher hoped to be able to conduct the whole study using only qualitative methods, however, this was found not to be possible or appropriate, and as such, it was necessary to identify and implement a second phase of data collection methods. The purpose of this was to be able to qualify and validate the results of the analysis of the qualitative phase.

Data for both the questionnaire (Appendix 5) and validation activity (Appendix 6) were collected using a separate link for each, hosted by the online survey facility Survey Monkey. Data collection is discussed in full in Section 3.2.2.1 of Chapter 3, and analysis is fully discussed in Sections 4.2 and 4.3 of Chapter 4. Once collected, data were manually extracted and systematically transferred to a data analysis sheet, specifically designed for use during this study.

Questionnaire participants were asked if they would be interested (yes or no) in participating in subsequent phases of the study. This allowed for a mailing list of study participants to be formulated, and later used to circulate the link for the validation activity to those who already had an awareness of the nature of the study, and who had expressed an interest in further involvement with it. Additionally, taking this approach aligned with the design of the study generally because it was necessary that a participant of the validation activity had already participated in the questionnaire. This is because the process was intended to confirm the interpretations from the analysis of the questionnaire data, rather than looking to further elaborate on those. It was anticipated that if further development were to occur in the future, for example, if it became possible to develop the user-needs into a product for demonstration, different participants would be recruited at that stage to explore the feasibility of the solution. Further elaboration, could, if necessary, be explored at that stage. Recruiting a completely new sample of participants to take part in the validation activity would not have produced results appropriate for informing the study, nor would taking such an approach have achieved the objectives of this phase of data collection. As such, the majority of time, in terms of participant recruitment, was allocated to recruiting participants for the questionnaire. It was therefore anticipated that the validation activity would produce results in a timelier/quicker manner than the questionnaire. This was taken into consideration when designing the whole quantitative phase of data collection, and when planning the analysis.

5.3.1 Questionnaire

For the questionnaire, twenty-five of the researchers existing contacts were contacted by email, and requested to act as 'gatekeepers' and circulate, to their own contacts, the online link to the Survey Monkey hosted webpage.

The questionnaire was live for seventy-eight days, and thirty-two completed questionnaires were returned. The decision was taken to close the survey at thirty-two participants because data entry had stalled, and it was not anticipated that further responses would be generated, since all points of contact had been exhausted. Eighteen (56.25%) participants were male, thirteen (40.63%) female and one (3.12%) participant declined to answer the question on gender. Age of participants ranged as follows: 18-20 (12.5%), 21-30 (31.25%), 31-40 (21.875%), 41-50 (18.75%) and 51-60 (15.625%). The oldest participant was fifty-nine years old, and the youngest, nineteen years old. In terms of years participating, ten (31.25%) had been participating in adventure sport activities for one to four years, five (15.625%) for five to nine years, seven (21.875%) for ten to nineteen years, seven (21.875%) for twenty to twenty-nine years, and three (9.375%) for more than thirty years. The longest time spent participating was forty years. Participants were asked which adventure sport activities they participated in on a regular basis, and Table 5.2 below summarises the responses. This was a multiple answer question and represents all the activities the participants indicated participating in, as such, some participants may have indicated that they participate in more than one adventure sport activity.

Table 5.2: Summary of adventure sport activities participated in on a regular basis and number of participants.

Adventure Sport Activity	Number of regular adventure sport participants
Snow sports	8
Paddle / water sports	11
Rock climbing	14
Hill walking	9
Off road / trail running	9
Biking	17
Open water swimming	1
Organized (adventure racing, events)	3
Mountaineering	5
Expeditions	2

In order to obtain an even distribution of responses from a range of skill levels of adventure sport participants, questionnaire participants were asked to provide their skill level. Responses to this question were not vetted or validated, and were provided based on the skill level the participant perceived themselves to be at the time of completing the questionnaire. Questionnaire participants were provided with four skill levels to select from:

- i. novice,
- ii. intermediate,
- iii. advanced, or
- iv. professional/provider.

Explicit descriptions were not provided for each of the skill levels offered as choices. The reason for deciding not to provide explicit descriptions was simply because it is not possible to do so. Reliable and validated guidance does not currently exist, and in fact may vary across individual adventure sport activities, and even individual disciplines within different adventure sport activities. This issue was identified earlier in the study, and is discussed in greater detail earlier in this chapter (see Sections 5.2.1). It is hoped that the results of this study will assist in developing a better understanding of this issue generally, and could be useful for building on the suggestions of participant types, offered by INSIGHTS 2003, and discussed by Greenwood and Yeoman (2007) (see Table 2.3).

In terms of responses provided for this question, the definition of each skill level was therefore determined by each individual questionnaire participant. Four (12.5%) considered themselves to be novice level adventure sport participants, fourteen (43.75%) intermediate level adventure sport participants, ten (31.25%) advanced level adventure sport participants, and four (12.5%) indicated that they considered themselves to be at provider/professional level adventure sport participants.

One trend that was clear from the responses was that those questionnaire participants who had been taking part in adventure sport activities for a longer period of time considered themselves to be of a higher skill level than those who had been participating in adventure sport activities for a shorter period of time. This is discussed in Section 5.2.2 of this chapter, and explores the notion that the period of time spent as an adventure sport participant is a key indicator of perceived participant skill level. During the qualitative phase of data collection this was found to not always be the

case, and the opinion was formulated by the researcher that skill level could be more accurately assessed when one used history of actual participation (i.e. evidence of skills development and routes completed), rather than periods of time (i.e. days, weeks, months, etc.). Figure 5.2 below illustrates the connection between the participant skill level provided in respect of their personal perception of the level they were at and the number of years they had been an adventure sport participant. This finding is interesting since it aligns with those observations and findings that emerged from the qualitative phase of data collection, where skill level was considered to be related to, and assessed by, length of time spent being an adventure sport participant or participating in a particular activity.

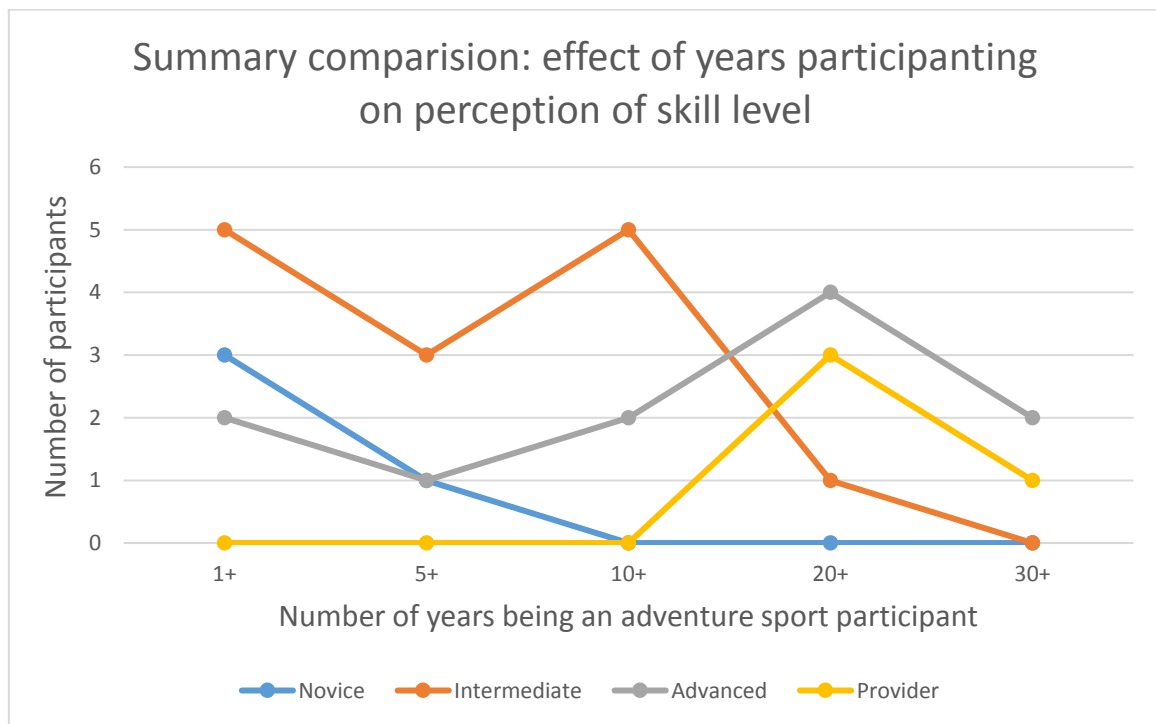


Figure 5.2: Summary comparison of level of skill (perceived by participant) with number of years spent as an adventure sport participant.

Questionnaire participants were then asked to allocate a score indicating how important they considered the list of user needs, and components of, to be to adventure sport participants. A score of 1 indicated very low importance, 2 indicated low importance, 3 indicated medium importance, 4 indicated high importance, and a score of 5 indicated very high importance. Results are summarised in Table 5.3 below. The first column provides a description of the user need; the second column provides a description of individual components of each user need. The user needs, and components of, were derived from the results of the qualitative phase of data collection (discussed fully in Section 5.2). The third column summaries the scores provided by questionnaire participants, and is effectively a summary of the results of the questionnaire phase of data collection. The score column is divided into five sub-columns, the data input into these columns reflects the number of questionnaire participants who scored the individual component as such, for example, 4 placed under sub-column five of component 'what activities are available' indicates that four questionnaire participants thought this component to be of level 5 (very high) importance.

Table 5.3: Results from analysis of questionnaire data.

Description	Component	Score				
		Very low 1	Low 2	Medium 3	High 4	Very High 5
	What activities are available	2	4	4	11	11
	Locations	1	1	8	14	8
	Access information	2	2	5	15	8
	Reliable and trustworthy information (weather/conditions/routes/equipment)	1	1	4	12	14
U_N2		1	2	3	4	5
	Where to participate based on skill level	0	2	4	17	9
	Where to participate based on activity choice	0	3	6	11	12
	What to expect in different locations	0	2	11	8	11
	What facilities are available	0	2	9	12	5
U_N3		1	2	3	4	5
	Based on location	2	8	10	8	4
	Based on activity choice	1	5	9	8	9
	Based on skill level	0	7	11	4	10
	Access to [adventure sport] community information	0	7	6	15	4
	Access to beta information	2	10	12	8	0
	Ways to share experiences	1	4	10	12	5
	Links to other [adventure sport] community members	0	6	11	13	2
U_N4		1	2	3	4	5
	Most appropriate skills courses for level/needs	0	1	10	9	12
	Where [locations] skills courses are	0	6	10	9	7
	Links to different skills providers based on individual needs	0	3	14	9	6
	Guidance to select a skills course	1	7	6	12	6
	What to expect from a skills course	0	2	7	13	10
U_N5		1	2	3	4	5
	Facility to record activity [log book]	4	9	6	9	4
	Facility that matches skill level/ability to participation options	2	4	12	7	7
	Framework for progression based on individual needs	2	7	7	10	6
	Information about progression routes	1	5	4	16	6
	Suggestions for most appropriate progression routes	1	5	5	17	4

The results show that all user needs, and their components, were considered to be at least of medium importance to those adventure sport participants who completed the

questionnaire. This reflects that the results and interpretations from the qualitative phase were robust and of good quality. This also demonstrates that the data collected were sufficient and that an in-depth understanding of adventure sport participants was formulated during this time, and in effect impacted positively upon the identification of appropriate user needs. Taking this approach, and implementing this process, could, in effect, reduce the timescale required to move an end product from prototype phase to being on the market and in use proper. This highlights the importance of involving the end-user from the outset of a study, and at all stages of the scoping phase, when attempting to establish a response to changes, problems, etc., that may be occurring and/or emerging, but are proving difficult to define during the initial stages of the study.

The scores identified following analysis of the questionnaire data were then extracted from the tabulated data analysis sheet and summarised to present the level of importance: very low, low, medium, high or very high, of each of the user needs and their components. Table 5.4 below provides a summary of this process.

Table 5.4: Summary of results and level of importance allocated to user needs and components of.

Description	Component	Result
U_N1		
	What activities are available	Very high
	Locations	High
	Access information	High
	Reliable and trustworthy information (weather/conditions/routes/equipment)	Very high
U_N2		
	Where to participate based on skill level	High
	Where to participate based on activity choice	Very high
	What to expect in different locations	Medium/Very high
	What facilities are available	High
U_N3		
	Based on location	Medium
	Based on activity choice	Medium/very high
	Based on skill level	Medium
	Access to [adventure sport] community information	High
	Access to beta information	Medium
	Ways to share experiences	High
	Links to other [adventure sport] community members	High
U_N4		
	Most appropriate skills courses for level/needs	Very high
	Where [locations] skills courses are	Medium
	Links to different skills providers based on individual needs	Medium
	Guidance to select a skills course	High
	What to expect from a skills course	High
U_N5		
	Facility to record activity [log book]	High
	Facility that matches skill level/ability to participation options	Medium
	Framework for progression based on individual needs	High
	Information about progression routes	High
	Suggestions for most appropriate progression routes	High

The results from the questionnaire were then used to inform the next phase of data collection – the validation activity. Findings were extracted and carefully considered alongside those results from the qualitative phase of data collection. A process of

elimination was used, whereby both data sets were used to formulate an extensive list of user requirements – effectively a list of components which related to the user needs and their components, but was a more refined version of those. It was anticipated that the user requirements could be used to develop a response (i.e. solution) to the problem, suitable for use by adventure sport participants. Therefore, each user requirement was explicitly formulated to provide a solution to the user need. To do this, each of the user needs and associated components were translated into an item that could be designed, developed, and actually used by an end-user (i.e. an adventure sport participant).

This process was repeated until exhaustion and duplicated user requirements were extracted until a single user requirement, which met the specifications of each of the user needs, was identified. Each of the identified user requirements were then transferred to a User Requirement Validation Table.

5.3.2 Validation Scoring

Twenty-seven potential validation participants were contacted by email, with a link to the Survey Monkey hosted webpage (Appendix 8). The adventure sport participants who were contacted were those who had provided their email address during completion of the questionnaire and had indicated that they would be willing to contribute to subsequent phases of the study. The validation table (Appendix 8) was live for forty-three days, and eleven completed validation tables were returned. This produced a 40.74% return rate. The decision was taken to close the survey at eleven

participants because data returns stalled at this point. Six (54.54%) participants were male and five (45.45%) were female. Ages ranged as follows: 18-30 (9.09%), 31-40 (36.36%), 41-50 (9.09%), and 51-60 (45.45%) – the oldest participant was fifty-nine years old, and the youngest, nineteen years old.

Validation participants were asked to provide their location; it was assumed they would provide the geographical location in which they are normally residentially based or spend the majority of their time. Provision of this information was optional, all (100%) of the participants provided a response. Table 5.5 below provides a summary of responses.

Table 5.5: Summary of geographical locations of validation activity participants.

Location			
Town	Country	Number	of
		Participants	
Devon	England	1	
Edinburgh	Scotland	2	
Forfar	Scotland	1	
Shropshire	England	1	
Cornwall	England	1	
Fort William	Scotland	1	
Suffolk	England	1	
Cork	Ireland	1	
Dundee	Scotland	1	
Whiteabbey	N. Ireland	1	

From these responses, it is clear that the majority of the validation participants are normally resident in urban types of areas. This observation is based on an existing knowledge of areas that are both residential, and areas that are typical of an economy

that relies on an income from the provision of adventure sport activities. It can therefore be assumed that the majority of the validation participants travel to adventure sport locations in order to participate in adventure sport activities. This finding aligns with those presented in the VisitScotland (Tourism Research Scotland) 'Adventure sport research' report (2006), and the VisitScotland (Tourism Research Scotland) 'Adventure Travel in Scotland' report (2010).

The validation responses demonstrate that opinion was gathered from adventure sport participants who are based in England, Scotland, Northern Ireland and Ireland. This was considered to be useful in providing a balanced perspective. Generally, it was noted that opinions provided were very much consistent across the four different countries. This represents an important finding for the use of any future product that may be developed following completion of this study. This is because the findings are based on data collected from a geographic range of adventure sport participants, and not just focused on the needs and requirements of adventure sport participants that are based in one geographic location and/or country.

From this, there is potential for future research to further explore this trend, and consider how adventure sport participant skill level is impacted based on two factors. Firstly, having to make the effort to travel to locations in order to participate in adventure sport activities, and secondly, how this might have an impact on safety, since the participant may not be in possession of local knowledge of the area and the risks which may be experienced in such areas. Additionally, there may be a link between the length of time taken to develop skills, and the effort required to maintain

these skills if an adventure sport participant is not based in a location where they can access adventure sport activities easily. Furthermore, there could also be a relationship between the willingness to pay for appropriate skills courses if one also has to factor in the cost of financing travel. This could be one key factor that is contributing to the number of new adventure sport participants who choose not to participate in specific skills courses, or that source their skills development from unreliable and/or untrained adventure sport participants they may have come across via online resources (resources which may or may not be reputable/genuine/authentic), for example, an online forum/website that is run by recreational participants with no formal industry qualifications and/or training.

During the auto-ethnographic data collection some adventure sport participants did discuss the implications of having to travel to particular locations in order to participate in an activity, say for a weekend. On arrival they indicated that they might find conditions to be unfavourable, for example, high winds, poor visibility due to cloud cover, etc. Regardless of this, the adventure sport participant(s) made the decision to continue with the original plans to participate, simply because it would have been considered a wasted opportunity and journey to take the decision to implement a different plan, or to call the plan off. Some participants were already well aware of the potential risks associated with taking this approach, however appreciate that others may not be so well equipped, and in possession of a full understanding of the dangers they may be placing themselves, and others, in. The focus, in these types of situations, appeared to be on making the most of the opportunity, regardless of the risk level. The implications of this approach likely require little in respect of explanation, however, there is potential for future research to explore this issue, and

help us to develop a better understanding of it, particularly exploring how it correlates with increasing mountain rescue call out statistics.

For the validation activity, participants were asked to allocate a YES or NO answer to indicate if they considered the user requirements and the individual components of each to be important to adventure sport participants. An open column for additional comments and/or feedback was also provided. Results are summarised in Table 5.6 below. The first column provides a description of the user need (which references the user needs that were explored during the questionnaire – see Table 5.3); the second column provides the unique ID reference number for each individual user requirement. The third column provides a description of each individual component of the user requirement. The fifth column indicates how many participants agreed (i.e., provided a YES response) that a particular user requirement was important to adventure sport participants; the sixth column indicates how many participants disagreed (i.e., provided a NO response) that a particular user requirement was important to adventure sport participants. Not all participants provided an answer to all questions.

Table 5.6: Summary of results from analysis of user requirement validation table data.

Description	Requirement ID	Component	Yes	No
U_N1				
	U_R1.1	A list of adventure sport activities that are available to participate in, in Scotland	7	1
	U_R1.2	A list of locations, linked to the list of activities, that it is possible to participate in adventure sport activities in Scotland	6	1
	U_R1.3	Information about how to gain access to adventure sport activities with a particular locations (e.g. information about a rock climbing venue including car parking, the walk in route, any other facilities etc.)	8	0
	U_R1.4	Information about things such as weather/conditions/routes/equipment that is reliable and trustworthy	8	0
U_N2				
	U_R2.1	Information about where (location) to participate in a specific adventure sport activity based on skill level	8	0
	U_R2.2	Information about where (location) to participate in a specific adventure sport activity based on choice of activity	8	0
	U_R2.3	Reliable information about what to expect in different locations including up-to-date details (contributed by members of the community) about things such as fallen trees, route/path obstacles, closed routes etc.	7	0
	U_R2.4	A list of facilities that are available in specific locations, such as, camping sites, food/drink outlets, toilets, petrol stations etc.	9	0
U_N3				
	U_R3.1	Suggestions of other adventure sport participants to link up/connect with based locally (permission would be asked to allow ones details to appear within suggestions, and suggestions would be offered based on a set boundary (e.g. 10 miles) from ones GPS location or location could be manually entered ahead of a trip)	7	4
	U_R3.2	Suggestions of other adventure sport participants to link up/connect with based on what adventure sport activity(ies) are participated in or want to be participated in (permission would be asked to allow ones details to appear within suggestions, and suggestions would be offered based on a set boundary (e.g. 10 miles) from ones GPS location or location could be manually entered ahead of a trip)	8	2
	U_R3.3	Suggestions of other adventure sport participants to link up/connect with based on skill level including suggestions of a similar skill level and higher skill level (permission would be asked to allow ones details to appear within suggestions, and suggestions would be offered based on a set boundary (e.g. 10 miles) from ones GPS location or location could be manually entered ahead of a trip)	5	3
	U_R3.4	A forum-style facility that members of the adventure sport community can contribute to about things such as events, meet-ups, trips etc.	9	1
	U_R3.5	A forum-style facility that members of the adventure sport community can contribute beta information to	7	1
	U_R3.6	A facility that allows members of the adventure sport community ways to share their experiences (blogs, stories, photos, videos) in one place that is easy to navigate around and find the appropriate information required/desired	8	0
	U_R3.7	A facility that allows links/connections to be made with other members of the adventure sport community	8	0
U_N4				
	U_R4.1	Suggestions for the most appropriate skills courses based on individual skill level and unique needs e.g. a course for an intermediate level participant that allows them to learn about rick climbing gear placement on a specific type of rock	9	0
	U_R4.2	Information about the location of the most appropriate skills courses to meet individual needs (location + skill level + needs)	9	1
	U_R4.3	Links to a selection of skills courses providers based on the most appropriate for the individual adventure sport participant (provider + skill level + needs)	9	1
	U_R4.4	A framework that assists in selecting the most appropriate skills course and provider based on individual needs	9	1
	U_R4.5	Detailed information about what to expect from a skills course including learning outcomes, the type of guidance to expect to receive, detail about the location including the local area etc.	10	0
U_N5				
	U_R5.1	A log book style facility that allows the adventure sport participant to record the activities they have participated in including activity, location, date, what they thought of it	6	4
	U_R5.2	A facility that matches participant skill level and ability with suggestions and options for participation	8	1
	U_R5.3	A framework for progression based on individual participant specific needs	8	1
	U_R5.4	Information about progression routes including detail about how to achieve individual objectives	10	0
	U_R5.5	A facility that suggest the most appropriate progression routes based on skill level, ability and participant specific objectives	9	0

As can be seen from the summary of results in Table 5.6, the majority of responses indicated that all the user requirements were identified as being important to adventure sport participants. Two components had a notably high level of NO responses. Although these responses were not impacting on the data in favour (i.e. YES responses), the significance of a NO response in comparison to the number of NO responses for the other components does demonstrate scope to further explore those particular components, and consider how they might be better developed in order to become more attractive to those validation participants who did not favour them. The two components in question were:

1. links to other participants (U_R3.1); and,
2. the use of a a logbook style facility (U_R5.1).

It is possible that those validation participants who indicated a dislike (NO) for those components were of a particular skill level, and therefore could not envisage a use for them. Alternatively, they may already be making use of such a facility (or similar) elsewhere, and therefore could not see a use and/or need for a further addition to their existing practice.

Since the purpose of this particular data collection activity was to validate the suitability of the identified user requirements, it was not considered necessary to further explore the rationale behind individual responses at this stage. Therefore, it is not possible to

allocated a definite reason for why these two components (U_R3.1 and U_R5.1), were considered to be less interesting by some of the validation participants. However, in terms of future development, a focus on better understanding how these two particular components (U_R3.1 and U_R5.1) could be made more attractive to all levels of adventure sport participant, or specifically marketed for use by a particular skill level group of adventure sport participant, could be useful.

Following completion of data analysis, the results produced were considered sufficient in informing the line of inquiry set out by the study. It was not considered that any further collection of data would be necessary due to consistency of findings. The themes identified through the results of the study are discussed fully in Section 5.4 of this chapter.

5.4 Themes

Following completion of analyses of all data collected during the study, three key themes were identified as issues that could be causing impact to the adventure sport industry, and associated communities: *provision of information, ability to accurately assess skill level and participate safely, and being a part of the adventure sport community*. Each theme is discussed individually below.

5.4.1 Theme 1 – Provision of information

Adventure sport participants thought there was generally a reasonable amount of information available about adventure sport activities, especially via online sources such as websites, blogs, forums, and digital magazines/zines. However, they did express concern in respect of being able to access information they considered to be genuine and reliable. The following was discussed:

“Using the internet to source information is like looking for a needle in a haystack. How can you be sure it’s right? Recommendations from friends is useful – but what if there are no friends to ask? Information is just not easy to access, the internet has too many conflicting opinions and how do you know what’s legitimate advice that is right for you? People who are already involved are the best to ask, but you have to approach them and this can be very intimidating to do.” (adventure sport participant, aged 32, Interview Participant Two (Phase xiii)).

Participants discussed the rise in popularity of ‘punter’ style sponsorship deals. This is when an adventure sport participant, who does not operate within a professional capacity (i.e. is not employed to facilitate or provide adventure sport related services), is offered a sponsorship-style agreement from an adventure sport organization/company. The agreement normally requests they provide information about their participation in adventure sport activities, typically in the format of, for example, photographic images, narratives (blogs, articles, website content), videos,

social media contributions (Twitter posts, Instagram posts etc.). In return for these contributions they can expect some sort of reimbursement, such as a financial payment (normally a small sum of money), kit and/or equipment, and/or exposure via the company's/organizations social media channels. These types of contributions were generally accepted, by adventure sport participants, to be a source of information, and it was highlighted that it was important to be aware of how valid the information provided via these 'punter' sponsorships was. Generally, those participants with more experience indicated that they relied on sources of information that were known to them to be reliable, and used by other adventure sport participants who they knew. However, those with less experience, did not seem to be so confident establishing the difference between information that was considered to be reliable and that which was not. There was clear concern with information provided in this way, how it would be used, and by which adventure sport participants.

There was mixed opinion in respect of these types of sponsorship agreements. Some adventure sport participants thought they were a good idea because they allowed average/normal people to share their own experiences, and communicate ideas about participating in adventure sport activities in a way that may be more achievable by the average adventure sport participant. This is in contrast to the image that is normally portrayed by advanced and professional level adventure sport participants, which can be interpreted in a more aspirational, but generally more unachievable, way. On the other hand, some adventure sport participants, especially those with a higher level of experience (in terms of experience gained from participating in adventure sport activities), felt these types of sponsorship deals could be unproductive. In some cases, it was thought there was potential to promote, on a wide public basis, an

incorrect perception of what the adventure sport industry is all about. In any case, the majority of participants were concerned about the reliability of information provided by those who engaged with these sponsorship agreements. Some were considered to be providing information that was exaggerated or simply selective.

Puchan's 2004 study discusses concern for those elite participants within the adventure sport community. With a specific focus on elite rock climbers, he highlights that they are not always paid appropriately for their contribution to the success (which in many cases is financial) of the brands, organisations, companies, etc., that they represent. Some adventure sport participants at this level rely on sponsorship style payments as their main/primary source of income. Puchan believes this is a reflection of undervaluing the importance of elite adventure sport participants, and is not aligned with mainstream sport sponsorship, for example, the football industry. It is quite possible that the emergence of the 'punter' style sponsorship is further aggravating this particular issue, and could be a contributing factor to the opinion of those advanced to professional/provider level adventure sport participants who expressed, during the course of this study, a dislike for the 'punter' style sponsorships.

In terms of information that was generally considered to be the best that is available; books were high on the list. However, it was appreciated that they could be out-of-date even by the time of going to print. Furthermore, books were also discussed as being unable to accommodate for changes occurring to terrain and/or access points. During the auto-ethnographic study the impact on landscape changes was noted, such as windfarm developments. These changes included not only the construction of the

windfarm infrastructure, but could also include changes to the landscape, for example, tree felling, access points for machine operations, and even new roads. This was found to have an implication on the accuracy of both books, and map-style information (Ordnance Survey (OS) maps were used during the study).

Magazines were thought to be a decent enough source of information, however, some participants discussed concern in respect of the validity of information. This was because there was a common belief that some brands provided kit, clothing, holidays, etc., free of charge to the editorial staff. Therefore, there may be an influence on the information reported in respect of, for example, the review of a piece of equipment.

It was discussed that a resource of information that could be relied upon, which provided consistent information would, in general, be very much welcomed by adventure sport participants, and would indeed be very useful.

5.4.2 Theme 2 – Ability to accurately assess skill level and participate safely

Adventure sport participants generally agree, and appreciate, that there is no existing pan, best practice style method currently available that allows individual participants to accurately assess their skill level. Additionally, participants agreed there was no method available that allows an adventure sport participant to make the connection between their existing skill level and the steps and/or processes they need

to/could implement in order to progress in a way that is based on individual, and unique, objectives and requirements.

Adventure sport participants also agreed that there was potentially a link between the increased number of mountain rescue call outs, and adventure sport participants that are unable to accurately assess their skill level. This is reflected in Annual Reports produced by the Scottish Mountain Rescue Service (2006 to 2014). Furthermore, it is generally accepted that there has been little effort directed toward addressing this issue. Nor have there been efforts implemented to exploring the issue and to offer a viable and robust solution, with the exception of talks and events, such as those organised by the Mountaineering Council of Scotland.

It was noted, from the researchers own observation and discussions with others, that these talks and events were normally well attended. This attendance appeared to be made up of those adventure sport participants who were aware that the talks were taking place. In order to gain this knowledge, it was accepted that one was already an adventure sport participant with an awareness of, and access to, industry events, Therefore, concern was generally directed toward those adventure sport participants who were less experienced, and as a result, potentially less aware that the talks/events were taking place. Alternatively, and hypothetically, it is possible that some may have felt too intimidated and/or inexperienced to attend them. However, it was highlighted that these were the precise demographic of adventure sport participants that could benefit most from attending these types of talks and events, and that more effort could

be made to make contact, and raise awareness with participants that fall within this group.

Of those adventure sport participants who were considered to be more experienced, or who operated at a professional/provider level, the gap in awareness between what participants perceived themselves to be capable of and what they were actually capable of was discussed on numerous occasions. Many narratives of this type were provided following a day of leading a group, which were noted to be normally made up of a majority of male participants. These experiences were most commonly discussed in relation to winter mountaineering excursions, on both an instructional and guidance basis. The extent of the seriousness of an accident occurring in the winter mountain environment was discussed, and the implications were most certainly understood by all who documented narratives on this topic. Previous studies have focused on perceptions of adventure sport participants (Holland-Smith and Olivier, 2013; Llewellyn and Sanchez, 2008; and Horvath and Zuckerman, 1993), and motivations for participating. Most focus motivations relating to sensation seeking (Kerr and Mackenzie, 2012). However, suggestions to resolve or address this matter, are not discussed in existing literature, nor were they offered or discussed by participants at any stage during the course of this study, demonstrating a gap in research that could be addressed by the findings of this study.

An extensive desk based study was conducted to better understand the existing guidance that is used by adventure sport organizations and companies to assist adventure sport participants in identifying their individual skill level. Although there

was an abundance of sources readily available to access online, there was found to be no consistent method that could be used by adventure sport participants, on a transferable basis. For example, one company may suggest that experience of five days paddling (canoe or kayak for example) would reflect sufficient experience to join a five-day intermediate paddling trip travelling through waters graded level three. Another company may suggest the same amount of experience (five days) would deem the participant suitable to join a five-day beginner paddling trip travelling through ungraded waters. Thus, providing information that is inconsistent cannot be easily applied to the context, and is not transferable between different companies, organisations, and also locations.

Furthermore, there was little to indicate exactly when the specified number of days of experience should have occurred. This therefore left the company exposed to inviting a participant to join them based solely on number of days' experience, not taking into consideration that the number of days' experience may, for example, have occurred ten or more years ago. To add another dimension, there was found to be no assessment of the adventure sport participant's physical capabilities or level of fitness. During the observational data collection activities, the researcher observed, on numerous occasions, participants being advised that they would be unable to participate for all or part of an activity. This decision was made by the professional/provider responsible for leading the group. The reason for taking the decision to exclude these particular participants was because they were not considered, by the lead member of the group, to be physically capable of taking part. The most common reason provided for this was that the participant was not considered to be of the appropriate level of fitness. Generally, this exclusion occurred at a

personal financial loss to the participant. It was noted that this exclusion was, on occasion, communicated in a way that reflected the participant to be the party at fault for not having a better understanding of their own fitness, skill level and/or ability. On these occasions, participants generally expressed disappointment and in some cases, anger. Almost all were confused, because they believed themselves to be at the appropriate level.

Since there is no guidance in existence that considers and assesses all necessary factors required to participate in any adventure sport activity, at a specific level, it is impossible to fully comment on these occasions when participants are excluded, because they have been unable to assess their suitability prior to participation. This presents four key factors for consideration:

1. Participants have only access to patchy guidance to allow them to assess their skill level.
2. Participants are forced to assess their own skill level (e.g. self-assessment) or undertake a process of peer assessment (e.g. friends assess skill level on behalf of participant).
3. Participants review guidance against skill level and consider how physically capable they view themselves.
4. Participants embark on adventure sport participation based on their own and/or peer assessment of skill and ability.

5.4.3 Theme 3 – Being part of the adventure sport community

Throughout the study there was a general awareness of ‘community’ within the adventure sport industry in that there was a degree of feeling of being part of a group.

The English Oxford Dictionary (ref) ([online: <http://www.oxforddictionaries.com/definition/english/community>]) accessed

01/07/2016) provides two definitions of what form a community can take:

1. A group of people living in the same place or having a particular characteristic in common, e.g. the scientific community.
2. The condition of sharing or having certain attitudes and interests in common, e.g. followers of a particular religion.

Both definitions were considered appropriate for those who participated in adventure sport activities. Generally, both definitions could be applied to the majority of adventure sport participants who engaged with the study, including a degree of overlap for some.

It was clear that the idea of community existed in that there was an overarching adventure sport community which encompassed all types of adventure sport.

Characteristics that were common across activities and locations included:

- i. **how participants presented themselves** – clothing and brands, hairstyles, language used when discussing matters, even means of transport (models and brands of cars and vans, for example, owning a Volkswagen campervan style vehicle was highly desired by the majority of participants with whom time was spent).
- ii. **ideals of the world** – desire for the remote and rural, dislike of crowded and urban spaces.
- iii. **life choices** - acceptance of low-paid jobs in order to satisfy desire to follow a dream.

Within the adventure sport community, there were clearly different types of sub-communities. These smaller sub-communities were more focused on specific adventure sport activities, for example, the mountain biking community, the rock climbing community, the river kayaking community, etc. There was a degree of overlap between these sub-communities, since many adventure sport participants chose to take part in more than one activity. However, it was observed that some participants were 'true' to activities which fell under one overarching heading/sub-community. For example, a participant may consider himself to be a member of the paddling community, and may participate only in paddle sports (e.g. canoeing, kayaking etc.). Yeoman and Greenwood (2007) discuss this trend, and relate it to a summary of market segments offered by INSIGHTS 2003 (Table 2.3). They highlight the difficulties in attempting to stereotype adventure sport participants, and provide us with the understanding that participants may fall into different categories, as well as different skill levels, with potential to overlap, and thus may fall into more than one category. For example, if a participant chooses to solely focus on paddle sport

activities, then there would generally be no overlap between activity sub-communities. The make-up of the various sub-communities themselves can be further broken down and distilled into more complex and unique values. For example, if the paddler owns a mountain bike, and uses this primarily as a method of transport, but in doing so travels along mountain bike trails, with a degree of expertise in doing so; could they then be considered as overlapping into the mountain biking community, even if they do not consider this themselves? Similarly, the paddler may choose to sample a different adventure activity that falls beyond the remit of the paddling community heading; how often must he sample this activity before the overlap into a different sub-community occurs? In order to define the parameters of sub-communities within the adventure sport community proper, a great deal of more focused research is required. For the purposes of this study, participants were considered to be a member of an activity-specific sub-community based on the types of adventure sport activities they participated in on the most regular basis.

Taking this view allowed perspectives to be formed about on those adventure sport participants who are very focused on one activity, or a series of very similar activities, and those participants who participate in activities that permit them to overlap, and be part of different adventure sport sub-communities. Although participants did not necessarily view themselves as being part of any one specific or particular community, or sub-community, in the same way that a resident of a particular location might (e.g. a rural dweller, a city dweller etc.), or a person undertaking a specific line of employment (e.g. a scientist, a receptionist etc.) might, when the notion of community was presented to participants there was a clear indication that being part of the adventure sport community, and associated sub-communities, was something

desirable, to be earned, and was based on a rich heritage that had been built, and almost grafted for. This observation was especially noted from those adventure sport participants who considered themselves to be of an advanced or professional/provider level of participant.

When the notion of community was discussed with those participants who had been participating in adventure sport activities for just a few years or so, and/or considered themselves to be of a novice or intermediate level, there was a clear indication that they were aware of the adventure sport community, and that activity-specific sub-communities also existed within. However, the adventure sport community was rarely discussed as something novice or intermediate participants felt, or considered, themselves to be a part of. In fact, some participants even discussed feeling intimidated, and not possessing sufficient experience to be considered a part of the community – either by themselves, or by those they perceived to be a part/members of the community.

This was further explored in an attempt to establish the benefits that being part of the adventure sport community might bring to the participatory experience of novice and intermediate participants. The study identified that, in being part of the community, the participant is exposed to components that may enhance the participation experience, including access to expert opinion and knowledge, from on-the-ground type resources (rather than potentially unreliable online resources, as is discussed in Section 5.4.1 of this chapter). These benefits were considered highly desirable, especially in terms of skill progression and development. Taking part in a particular adventure sport activity

alongside peers of the same skill level was considered acceptable to a degree, but it was appreciated that at some point being exposed to a participant with a greater degree of knowledge, experience, and even expertise would be useful in terms of skills progression. Even in terms of gaining access to knowledge of those places and locations to go to participate that would provide exposure to different, and perhaps more challenging, environments, it was considered necessary to have access to the opinion and expertise of a more experienced, and therefore knowledgeable, adventure sport participant. Additionally, participating in paid-for skills courses was considered acceptable to a point (in time) however, this was discussed as not always being possible due to the financial implications of doing so. Participants also discussed a desire to go off into those environments that can provide more of a challenge than those environments that are generally experienced while participating as part of a paid-for and/or group style skills course. This could be, for example, as simple as going to a more remote location to participate, where there are less facilities and people, therefore increasing the necessity to prepare ahead of actual participation and to carry all the necessary kit and equipment. There appeared to be a definite desire to challenge one's own ability as part of the actual skills development process.

Of those novice or intermediate level adventure sport participants who did feel themselves to be a part of the adventure sport community, this appeared to have occurred as a result of them being able to gain access to the community through a friend, family member, or partner. However, those who formed these types of examples discussed a different set of issues. The more experienced participants could become bored, and may want to participate at a more challenging level, therefore needing to spend time with their own peers. The less experienced

participants perhaps felt that the teaching style/instruction by experienced others was not the most appropriate to meet their learning needs, or they were being challenged beyond their abilities, and were pushed too far too soon. This type of issue was commonly discussed, and the researcher experienced the same herself on some occasions.

This resistance, as it could be described, toward newer members of the adventure sport community, was further explored. The theory was discussed with those participants who considered themselves to be of an advanced or professional/provider level of adventure sport participant, and also with some of those responsible for facilitating participation activities with the novice or intermediate level of participants. A definite divide was observed and recorded. Some participants discussed having issues with those who come to take part in adventure sport activities because they were seeking thrill and adrenaline fuelled experiences, and also those participants who have a different approach and existing lifestyle, for example, those who are employed on a full-time basis and take part in adventure sport activities on a sporadic basis. Potentially, there may be a fear of what impact could occur if these types of participants are permitted membership of the adventure sport community. Also discussed during the study were those adventure sport participants who demonstrate risky types of behaviour when they are participating in adventure sport activities. Of particular concern were those who are not confident in the actions they take, but take them regardless, or those participants who believe themselves to be more capable and skilled than they actually are. These opinions indicated that there was perhaps a degree of attempting to protect existing members of the community, and those

participants who do practice safe approaches when participating, and have dedicated the time to learning the necessary skills.

Chapter 6. A Solution

6.1 Introduction

This study set out to explore changes that are occurring within the adventure sport industry and associated communities in Scotland, as a result of increased participant numbers (Greenwood and Yeoman, 2007). This increase in participation is likely to have stemmed from the emergence of the *experience economy* (Pine and Gilmore, 1999). The objective was to implement a new mixed methods research model to explore the impact of these changes, use a process of problematization to identify issues, and explore how a response could be designed and used to address these issues. This chapter presents a discussion of the results of the study, and suggests a framework which has been designed to address the themes (problems) which were identified by the study.

6.2 Considerations in Designing the Solution

The study found that although there has been a notable increase in adventure sport participation over the past ten years (Greenwood and Yeoman, 2007), there is a lack of existing provision to allow those newer adventure sport participants to firstly, establish their needs relating to skills progression and development, and secondly, to establish how to meet these needs in a safe and appropriate manner. This understanding emerged following consultations with professional/provider level adventure sport participants who discussed facilitating activities, such as providing instruction and/or guidance (on an activity route for example) with adventure sport

participants (usually on a paid-for basis) who required the services (guidance and/or instruction) of a more experienced participant.

Following a conversation with the participants in respect of their objectives related to participating in the activity and a documentation of their skill level, normally allocated by the participant themselves, the professional/provider would then make a decision about what format the day's activity(ies) would take. The professional/providers would later, away from the company of the participants they were guiding/instructing, discuss a similar and recurrent experience. They would embark on the activity based on the information about the participant's skill level and ability (usually provided by the participant themselves), and at a later point during the day discover the participant to be of a lower skill level and/or ability (this could also include physical ability and fitness) than that which the participant had originally documented prior to embarking on the activity (i.e. during the planning phase of the day/activity).

Quite often, the result of this caused significant impact for the professional/provider, and, if in a group situation, also caused impact to the other members of the group. Although the narratives were generally recounted without detail of any injury, or much distress caused to any member of the party, this is not always the case. Quite regularly, media coverage often reports a much graver account of events, and the same is evidenced in the Scottish Mountain Rescue Annual Reports (2006-2014).

The safety implications of these types of scenario are simple, even for those who do not participate in adventure sport activities, to understand, with clearly little explanation

required in terms of the resulting impact(s). Together, along with increasingly regular media reports of accidents occurring in mountainous environments, and a significant increase in mountain rescue statistics, one can begin to make the connection of the increase of adventure sport participants and the increase in mountain environment accidents (total mountain rescue incidents in Scotland have increased 29% since 2001, Scottish Mountain Rescue Annual Report, 2015) However, little has been evidenced to allow us to better understand this issue, nor have there been efforts to explore solutions, or make suggestions that could be implemented in order to reduce this impact. Additionally, there appears to have been little action taken, or that is planned to be taken, by the professional/provider level adventure sport participants in order to reduce the impact (on themselves and/or others), or to more accurately assess participant skill level prior to participating in any activity.

This study explored existing offerings, from professional/provider sources of adventure sports, including national centres, adventure sport organisations, guidebooks, websites etc., to establish the guidance that currently exists to allow participants to assess their skill level prior to participating in an adventure sport activity. Although there was an abundance of information available in this respect, from a range of sources, some considered to be reputable, some less so, there was no guidance found that was based on any solid evidence base, nor was there found to be any available pan, universal-style standard which is, or could be, used across the adventure sport industry. It was understood that different adventure sport activities do need to be assessed in different ways. However, vast variations were found in respect of how different sources identify criteria for skill assessment of participants. For example, one rock climbing website may suggest that number of days spent rock climbing on a

particular type of rock would suggest a participant be of a specific skill level. Another may suggest that having the ability to complete a specific graded climb would suggest the participant be of that same grade. While both methods of assessment do have merit, they are both open to interpretation by the adventure sport participant, and both present flaws in respect of them being used as the single criteria which is used by participants to assess their skill level.

When this was further explored by the researcher, in 'real-time', alongside other adventure sport participants, in different scenarios, environments, and with a range of abilities including technical and non-technical, the narratives of those professionals/providers who had documented these experiences were considered to be accurate, in that they aligned with those behaviours that were observed and recorded by the researcher during qualitative phases of the study. The issue however became significantly complex, and the following observations were recorded, with a degree of overlap occurring between each:

1. Participants assess their own skill level based on guidance that is provided by the professional/provider (usually on a website) prior to selecting an adventure sport activity to pay for and participate in.
2. To a degree, adventure sport participants implement a type of self-assessment process, whereby they assess their own skill level against that of their peers, or use media they have accessed online to assess themselves.

3. Skill level may be assessed differently by different professional/providers, and therefore participants may be unable to identify/allocate their skill level accurately.
4. Guidance about how to accurately assess skill level does not appear to exist.
5. Guidance about how to transition from one skill level to the next does not appear to exist.

Point 5 (above) was further explored with adventure sport participants. The greatest issues were reported to occur when making the transition from novice adventure sport participant to intermediate adventure sport participant. From the outset, being a novice (beginner) adventure sport participant is relatively easy to define, the notion is planted and one makes the decision to 'try out' a new activity. Ahead of actually beginning to participate the participant must do a certain degree of research to familiarise themselves with the logistics, for example, they need to establish where it is possible to take part in an adventure sport activity, and what equipment they may need to take part. At this stage, they have not participated in the activity before and need to 'begin' doing so. On this occasion, and generally the next couple of occasions, the skill level of the participant is relatively easy to define, by themselves and others – they are clearly defined as a novice adventure sport participant. However, it seems that it is after this initial period of engagement that things become less clear, and there are a number of factors that are required to be taken into consideration:

1. **Frequency** – how often the participant chooses to take part in the activity, and the length of time between each occasion of participation.
2. **Time** – how long the participant takes part in the activity at any one time (i.e. a full day or a couple of hours).
3. **Locations** – which locations the activity takes part in (e.g. remote and demanding outdoor rock climbs, or indoor short-pitch rock climbs).
4. **Access to teaching** – does the participant have access to a reliable mentor or someone who can guide and advise them, or do they do a lot of self-learning and/or learn-by-doing type of participation.
5. **Conditions** – environmental conditions (e.g. weather, terrain), and the impact such conditions can have on development of skill and confidence (positive and negative experiences).
6. **Ability** – personal ability of the participant, some have a natural ability, others may have to work harder, some are physically fitter than others and this can have a positive impact on progression.
7. **Desire** – the participant want to progress quickly, or perhaps prefers a more relaxed approach to progression.
8. **Interest** – in the necessary skills required to become more competent and advanced (e.g. progressing to leading a rock climb requires knowledge of rope skills and additional safety considerations – does the participant have an interest in leading rock climbing routes AND learning the necessary rope skills?).
9. **Other commitments** – that may have an impact on the participatory journey (including financial and time constraints).

Once a participant overcomes the initial stage of engagement, and decides they would like to participate in an adventure sport activity on a more regular basis, the above listed factors may become useful in defining the next phases of approach toward participation. Because these factors are so unique to each individual participant, it can become impossible for a participant to use generic guidance to establish how they might assess their own skill level, and use this knowledge to influence how they approach participating in an adventure sport activity. However, this knowledge will effectively allow participants to progress and develop their skill level.

Because a universal method of skill assessment guidance does not currently exist in an appropriate format, a large number of adventure sport participants appear to encounter what can be described as a 'grey area'. In the 'grey area' participants make use of whatever guidance is currently available to them. This available guidance is coupled with their own knowledge (which may actually be more limited than they perceive it to be) and is used to establish what action they need to take order to meet their own objectives related to adventure sport participation. The results of this approach were found to be varied. Some participants were noted to succeed perfectly fine. Others appeared to settle at a point where they are able to progress no further, and simply accepted this. Others pushed themselves to a point where they were potentially putting themselves, and others, in danger. Additionally, adventure sport participants who find themselves in this 'grey area' and are unable to identify an appropriate action plan to allow them to progress, may actually chose to remove themselves from the process altogether, making the decision to no longer take part in any adventure sport activities. Reasons for this may vary, but could include feelings such as boredom and frustration, perhaps even fear or inadequacy.

Participants who are in the 'grey area', with aspirations to transition from novice participant to intermediate adventure sport participant, and perhaps even beyond, are potentially of great opportunity to the adventure sport industry and associated communities. In terms of gaps in the market, and existing product offering, there is potential for professional/providers to develop a better understanding of this particular segment – the 'grey area' - of the market, making use of information about how they behave to develop a more appropriate product offering, that is better at meeting the needs and requirements of this group of participants. Additionally, in monitoring individual participant behaviour there is potential to collect data that could be used to establish solid guidance, which is of an industry standard, and could be used by both participants and professional/providers to allow an accurate assessment of skill level to take place. Doing this could reduce those pressures, in terms of safe approaches, put upon professional/providers, mountain rescue providers, and to an extent, other participants. Suggestions for how this might be possible are discussed in Section 6.3 of this chapter.

6.3 Recommendations to Address those Issues Identified by the Study

This section discusses recommendations which could be used to provide a solution to those issues that have been identified by this study. Section 6.3.1 provides an overview of what is required. Section 6.3.2 outlines recommendations for how these requirements should be implemented, and an overview of how the system, including data management and processing, could work. Section 6.3.3 discusses how

the framework could be developed for use in the future, and what outcomes may be possible following implementation and sustained use of the proposed solution.

6.3.1 Overview of What is Required

This study found that adventure sport participants, who had taken up adventure sport activities as a result of prompts, in whatever format, occurring as a result of the emergence of the *experience economy* (Pine and Gilmore, 1999) may experience difficulty making the transition from novice adventure sport participant to intermediate adventure sport participant, and beyond. This issue has been termed as a 'grey area'. There were a number of factors that contributed to this, which are discussed in greater detail in Section 5.4 of Chapter 5, including: *lack of reliable information* (Section 5.4.1) and *being unable to accurately assess their skill level* (Section 5.4.2). The impact of these factors is discussed in full detail in Section 6.2 of this chapter, however the most important of these issues was found to be participant safety. Further research is required in order to understand the full extent of the economic effect this may have had, or has potential to have in the future, on the adventure sport industry. It is assumed that participants who experience the 'grey area' may be less likely to seek out ways to spend money on, and invest in, adventure sport activities because they do not know where there is the best place to do so in order to meet their needs.

6.3.2 Model of a Framework and Design Solution to Address the Problems Identified by the Study

The framework suggested in this section has been designed in order to propose a solution which may address those themes (i.e. issues) that have been identified by this study. In order for the framework to be implemented, input would be required from adventure sport participants on the one hand, and from adventure sport professional/providers on the other. Both parties could expect a return for their input. It is anticipated that the system would suffer potential failings in the event of lack of input from either user group. For the purposes of this discussion, adventure sport participants will be called User Group 1 and coded UG_1. Professional/providers will be called User Group 2 and coded UG_2. Input will be coded as I, and output coded as O. So for example, information that is collected by an adventure sport participant will be coded as follows: UG_1I.

Table 6.1 below outlines the information that UG_1 would be asked to provide to the system, including permissions the system would ask the user to 'allow' access to.

Table 6.1: Summary of information that adventure sport participants would have to provide in order to use the service.

System Input(I): Adventure sport participants (UG_1)		
Id.	Information set	Component
		Name
		Date of birth
		Email address
		Location (Postcode)
		Participated in regularly
		Already completed/participate in
		Interested in learning more about/participating in
		Specific skills interested in learning
		Specific routes interested in completing
		Specific locations interested in participating in
		Specific number of occasions participating in an activity
		Specific courses/certificates/qualifications interested in completing/achieving
		Set permission to link with other users (UG_1)
		Set permission to receive information from appropriate professional/providers (UG_2)
		Set permission to receive information about appropriate events
		Option to view information about alternative locations (planned trip/on location)
		Set permission to track activities
		Option to record activities in a log book style facility
		Option to share participation with other users (including photographs, narratives, videos etc.)

The information provided by the adventure sport participant would be collected and stored in a data management system. This information would be used in a number of ways in respect of User Group 1. Details of these are listed below.

1. To provide UG_1 with information about adventure sport participation that is appropriate and useful to them. For example, what equipment is needed, the most suitable professional/providers for them, the most suitable locations for them to participate in adventure sport activities.
2. To allow UG_1 to track and monitor their participation activity including the option to set objectives (including information about how to achieve these objectives). This could be used as a type of 'on paper' proof of skill level.
3. Provide UG_1 with the option to link up with other users (i.e. the community) of the system including meet ups and opportunities to share skills with other adventure sport participants.

User Group 2 would also have access to outputs provided in response to the inputs provided by User Group 1. It is envisaged that these could be used in the following ways:

1. To provide UG_2 with information about UG_1 participation behaviours. For example, where they are going, and what they are doing when they get there. Additionally, over time, the data would build to provide UG_2 with a definition of the different types of UG_1 journeys. For example, how long it takes to

achieve particular objectives/goals, the length of time between actually taking part in activities, the number of skills courses they sign up for etc.

2. To use information about UG_1 participation activity to identify gaps in the market in terms of existing product provision/offering, including identification of locations where there are low/nil existing products (e.g. activities, services, equipment) available but that are popular locations with UG_1. Similarly, these data could be used to identify the existing product offering that is not attractive to users, allowing UG_2 the opportunity to either remove it completely from the product offering, or to make alterations to the offering, making it more attractive to UG_1.
3. To provide UG_2 with a platform to share information about their product offering, events, special offers, etc. with UG_1 who have expressed an interest in the activities they offer. There is also potential to assist those users from the UG_1 group who wish to set objectives (e.g. skills development) by implementing a type of matching service whereby the UG_1 objective(s) are matched with UG_2 product offering(s).
4. To provide UG_2 with insights to allow them to identify specific staff training needs and requirements. There may also be potential to identify specialist training needs, which may, for example, be specific to particular geographical locations.

For the system to work, User Group 2 would also be required to provide a series of inputs, Table 6.2 below provides a summary of the information that this group would be asked for:

Table 6.2: Summary of information that professional/provider participants would have to provide in order to use the service.

System Input(I): Professional/Providers (UG_2)		
Id.	Information set	Component
		Name
		Product offering
		Location (Postcode)
		On-site facilities
		Local facilities
		Skills courses
		Additional products available
3.	Details about grading system	For each activity offered
		Experience
		Areas of expertise
		Specialist skills offered
5.	Details about grading and product	Based on a comparative table type structure (2 plus 3)
		Events
		Offers

Both User Group 1 and User Group 2 would enjoy benefits from using the system, and essentially the return of investment (i.e. providing information to and using the service) should be quite balanced. Both user groups should be provided with a significant degree of insight from using the service, provided they make use of the individual components of the service that are available to them.

In summary, the benefits to User Group 1 could be:

1. Ability to track and monitor progress.
2. Easy access to appropriate information that can be relied upon.
3. Access to information that is tailored to individual needs and requirements.
4. Option to build a personal framework for progression.
5. Access to information about events that are tailored to individual needs and requirements.
6. Opportunities to build relationships with other users.
7. Easy access to appropriate professional/providers – activity specific and geographically relevant.
8. Potential to build on ability to participate based on unique/individual needs, requirements and objectives.

The benefits to User Group 2 could be:

1. Access to very specific information about the customer (in-depth demographic segmentation)
2. Access to intelligence to tailor product offering based on what users (effectively paying customers) actually want and need.
3. Ability to track market activity and trends.
4. Access to people who will actually buy/pay for the product (e.g. service, equipment, etc.).
5. Access to intelligence to facilitate brand building.

6. Access to intelligence to identify which courses to develop/alter/introduce.
7. Access to intelligence to identify staff training needs.
8. Access to intelligence about which locations (geographical) users are going to, how much time they are spending there, and what they are doing (activity) when they are there.
9. Access to users who may be interested in special events and offers.

The benefits to both User Group 1 and User Group 2 could be:

1. Potential to develop the market – economically and from a community perspective.
2. Potential to develop a better understanding of behaviours of adventure sport participants, and act appropriately.

6.3.3 How the Solution Could Be Developed

In order for the service to meet all the user needs identified by this study, it would be necessary for both user groups to make use of it on a sustained basis for a period of time. The economic benefits of using the service, and the ability to better connect adventure sport participants with appropriate professional/providers has the potential to be experienced after using the service for a relatively short period of time, perhaps even quite quickly. In addition, there is a second issue which the service could be useful for addressing. The additional benefit is that the service could produce data that can feed into the identification and development of a method that allows

adventure sport participants to assess skill level in a way that is accurate and can be relied upon.

For this objective to be achieved, the service would be required to be used for a sustained period of time. The exact time required to do this has not been defined by this study. However, this could be defined once the number of unique User Group 1 users of the service has been identified, or at least estimated. This is a matter of interest for future research. For the purposes of this study, the development of the service is discussed here based on it being a suggestion that could be used to address the issues identified during the study.

In the first instance, data about participant skill level would be best managed based on that guidance which currently exists. This guidance could be sourced from a number of leading professional/providers, preferably those of national level. This guidance would be used as the base line. This is the best guidance currently available to use in this respect. The system would then need to collect data from UG_1 users including:

- type of adventure sport activity
- route(s) taken
- time spent participating.

After the defined period of time has elapsed, the collected data should be extracted from the data management system and compared with the existing baseline guidance that was initially used to assess participant skill level. These data would be analysed and the findings used to define more appropriate and accurate guidelines for assessing participant skill level. The analysis should take into consideration the average skill level recorded, the average amount of skill lost by a participant, for example, when they take a break from participating, and then establish a modal value that can be used to define an accurate transition zone from one skill level to the next.

These findings could be further refined and used to develop activity specific guidance which could be used on a universal basis by both adventure sport professional/providers and participants to assess skill level. Thus, allowing participants to take part in activities that are appropriate to their skill level, while also encouraging an increase in safe practices.

6.4 Summary and limitations of the model

The contribution to knowledge presented by this thesis has potential to be useful to a number of disciplines, the obvious disciplines being design, adventure sport, and business (development). However, the approaches discussed are transferable and could be applied within a number of other disciplines, and within different contexts, to explore other complex and difficult to define hypotheses. The approach used to collect data, demonstrates potential to inform other studies and be used as a hybrid research methodologies research model for exploring a line, or lines,

of inquiry which cannot be defined at the outset of a study. Additionally, the framework suggested, which was developed specifically to address those issues identified by the study, has potential to be used by different industries, presenting an opportunity to allow these industries to address an issue that has been identified, but also to assist in a business and economic development context.

Specifically thinking about design, this thesis contributes to existing knowledge in the areas of design thinking, and service design. Perhaps most specifically in respect of how design can be used as a method to identify and address an issue within an industry and/or associated communities, and encourage positive behaviour change. The theories presented in this thesis consider how to design a service that is appropriate for all end-user groups. There was not a focus on meeting the needs of just one of the end-user groups. Rather the needs of all potential end-users were explored and considered when thinking about the final output. Implementing a service that can be used by, and be of benefit to, multiple end-users, requires all end-users to provide input in return for an output, and therefore provides a value to them in return for their investment. Furthermore, the solution suggested by this thesis is not presented in a manner that is 2D or flat, but is envisaged to be of use to all users of the service; for example, adventure sport providers may provide input that is useful to adventure sport participants, just as participants may provide input that is useful to other participants. Any similar service should take this into account, and therefore manage the input data on a number of different levels. The result of this design is that all end-users are provided with an output that is of interest to them and that could, in theory, maintain sustained use of the service. It is essential that this is part of the model, because it is this sustained use that will eventually produce further tangible

outputs that allow the service to be developed so it maintains useful to all of the end-user groups.

Generally, many services are originally designed with the idea that they will be used on a sustainable basis by the intended users, however, they fail to succeed because they do not cater for the needs of all involved end-user groups (Young and Edis, 2006). This could be because they are designed to be one sided, they do not provide enough output to be of continued value and therefore use to the users, and/or, and most importantly, do not consider how the service can provide data that can produce a useful, and long-term, output in the future once the data have begun to be generated and collected by the service. This is where the process implemented during this study could be useful. Although the approach may prove to be more time consuming to implement initially, there is potential that by carefully defining the needs and requirements of all end-users there is reduced chance of failure.

From an adventure sport perspective; this thesis presents a better understanding of newer adventure sport participants, and assists in developing knowledge about how this group of participants could be better provided for to ensure their interest in participating in adventure sport activities continues beyond the initial, early stages. The thesis also presents theories about how embracing the newer adventure sport participants could be of benefit to those existing adventure sport communities.

From a business and economic perspective, this thesis suggests a framework that, if implemented by those who offer provision of adventure sport activities and services,

demonstrates potential to assist in a number of ways; firstly, in the identification of methods to offer improved provision for a wider skill level range of adventure sport participants. Secondly, to develop and refine existing provision to better suit the needs/wants/desires of participants. And finally, to assist in identifying specific staff training needs. The resulting outcome of implementing the suggested framework could allow those that do so to develop a better understanding of their existing, and potential customers, and to better understand the market generally, providing the opportunity to be in a position to effectively and efficiently tap into those who are genuinely interested in what they have to offer. This understanding may reduce wastage, which can occur when marketing tactics are poorly directed or implemented via less appropriate resources. Furthermore, a better understanding of the target market can assist in the reduction of wastage of other critical resources, such as product offering, staffing costs, and even locational losses, for example, if a provider is offering a service in a location that is not popular with adventure sport participants.

Understanding why humans behave in the ways they do will likely always present challenges (Schmidt, 2000), especially for those with no or little experience of analysing human behaviour. Similarly, catering for mass and/or unexpected changes within any industry can be greatly challenging and potentially disruptive, especially when changes occur alongside the unexpected, for example, similar to those discussed within this thesis, relating to increased participant numbers, and participants who have vastly differing objectives when they are participating in adventure sport activities. Additionally, changes which have potential to alter or disrupt existing practice, and effectively equilibrium, within any context, may be particularly difficult to deal with in the initial stages. It seems that there could be benefit in allowing these

changes to occur, and to permit a period of a 'dust-settling' prior to exploring the issues, identifying themes, and responding with the most suitable approaches that could be implemented to successfully address the issue(s). This may be a painful process. In the case of the adventure sport industry, some professionals/providers may have experienced financial loss. Indeed, an increase in mountain rescues statistics has caused great concern. Although it may be controversial to present this point in such an explicit manner, it has essentially been these painful experiences that have helped to highlight the need to explore and elaborate on those emerging issues, establish a rationale for why they have occurred, and to consider the most appropriate methods for designing a solution.

Using the lived experiences of those directly involved in, or with a connection to, the issue itself demonstrates strong potential to be used as a key methodology in other studies of a similar nature.

As discussed earlier, the suggested framework has been designed to be used by, and be of use to, two different groups with a common interest. Both groups provide an input to the system, and both receive an output in return for their investment. The service has potential to be useful from the outset of initial use. It provides users with the ability to build a relationship with, and to be useful to, each other. At the same time as being aware of the factors that are important to the different users, it provides a solution that is beyond a superficial, and essentially uninformed, potentially useless level. Sustained use of the service could allow data to be collected that provide a longer-term benefit to both users. This impact could also be experienced by non-users

of the service. The service would be designed so that data collected over a longer period of time could be used to identify and develop a pan-industry standard set of activity-specific guidelines. These guidelines could be used to identify adventure sport participant skill level accurately. This information would be useful to both participants and providers, but could also provide a benefit to those involved in, for example, mountain rescue efforts, even if they do not actually use the service for themselves. Of course, there is potential for the service to be misused. Due to the scope and timeframe allocated to this study, it was not possible to explore ways in which the service might be misused, but, for example, it is possible that participants may enter false information about themselves, or they may choose to have more than one account. It is also possible that providers misuse the system by, for example, encouraging participants to input data that provide positive feedback for the provider. Methods for managing this would need to be explored and tested; some participants may be willing to provide their views on this, and it would be useful to seek the opinion, advice, and guidance of other developers who have experience of developing these types of systems and solutions, and using their expertise to refine the solution to ensure it is protected, as best possible, from potential misuse. For example, it would be useful to have some sort of random checking system in place that selects data input on a sporadic basis and verifies those.

Another benefit of sustained use is that adventure sport participant activity could be more accurately monitored, and therefore provide for better, including improved skills course content, more appropriate skills course locations, and refined staff training needs. There is even potential to better understand what adventure sport participants are doing outside of times when they are actually participating, for example, what

brands they are wearing, what they are eating and drinking, what music they listening too. This type of additional information may be very useful for a provider looking to attract participants to becoming interested in their product offering, however, it can be difficult to obtain, especially if the provider does not have the financial and/or business acumen required to gain access to, and manage, this type of consumer data. Of course, care would need to be applied to how the participant data are collected, stored and used, since it is imperative that collected data are used in an appropriate way, and as participants understand that their data will be collected and used. To ensure that all collected data are appropriate, secure and useable, it would be necessary to further explore, elaborate on, and refine those requirements and components of the system that have been suggested in this thesis. To do this, a further, and indeed larger, sample of adventure sport participants and providers would be required to provide their views, and a phase of iteration may be necessary in order to either add or extract components as appropriate.

Effectively, the proposed solution operates in quite a similar manner to that of the hybrid methodologies research model used to explore the line of inquiry. By providing users with a method of better understanding, essentially their own, lived experience(s), and using this information to produce results that are suitable and appropriate for them, the participant becomes able to identify and address their own needs and requirements.

In order to better understand and establish the full extent of the possibilities of the solution, it would be necessary to refine, develop and test it. One limitation is that the

solution requires a significant amount of end-user input. This input would be required even at the testing stage. During the study, differing opinions about the solution were recorded from different skill levels of adventure sport participants. However, the specific skill level of participant that the proposed solution would be most suitable for was not explored in great, or in-depth, detail, and therefore more work is needed in this particular area. It is possible to suggest, at this stage, that the suggested solution may be more suitable and attractive to one particular skill level of participant, or perhaps different components (features) may be used more, or differently, by different skill level participants. This, it is anticipated, would become clearer during the testing/demonstrator phase of development. Intelligence gathered during this phase could be used to refine and develop the solution, and individual components of the solution, as well as assisting in defining a more specific target participant end-user (i.e. skill level of participant), who would both provide the most appropriate participant input and output for the solution to fully meet the objectives it was designed to meet. However, this is a critical limitation that needs to be carefully considered, because the system will not be able to produce the necessary longer-term data that are needed to be able to define the skill levels of participants if it is not used by a wide range of adventure sport participants, with a range of skill levels, interests, and behaviours. To ensure this limitation is addressed, it would be necessary to test the system with a different sample of end-users, and not resurveying the same sample used during this study. This will ensure that different opinions are collected and used to further refine the solution. Additionally, it will be necessary to obtain views from a larger sample of participants, in order to gather wider opinions, and perhaps the way to do this would be to look to gather responses via online forums, and even making use of contacts and relevant sources based outside of Scotland, and the UK.

Chapter 7. Conclusion and Future Work

This thesis provides a number of contributions to existing knowledge, including exploring the application of a series of research methodologies in a manner that permitted the identification of critical problems occurring within a field. Taking this approach allowed these issues to be further explored beyond what is currently discussed in existing literature. Using the hybrid methodologies model, further exploration of the problem permitted themes to emerge. The themes were then problematized, and solutions to address such problems were designed, drawing on influence from design thinking and ideation.

This approach was influenced by grounded theory approaches, and demonstrates the appropriateness, and usefulness of using qualitative methodologies within the discipline of adventure sport research, which normally tends toward the use of quantitative methodologies. Although the methodologies implemented are time consuming, potentially onerous, and require the researcher to have an element of expertise, in-depth existing knowledge, and awareness of the area to be studied (Sands, 1999), the potential to use the model, and implement the research methodologies, in the same, or a similar manner, does demonstrate scope for it to be useful as an effective means of identifying underlying issues that may not become immediately obvious by using other approaches and research models.

The literature survey was initially conducted by taking a wide-lens view. A number of topics of interest were identified and explored, including the rural economy in Scotland.

One interesting topic that was highlighted was the recent increase in adventure sport participant numbers. The literature suggests reasons for this, the impact it has had in respect of increased income for the local areas, and discusses trends predicted for future growth and the type of demographic the industry should consider providing for. The literature also highlights the impact the increase that participant numbers has had for existing adventure sport participants, including the impact of increased media and social media exposure. This is also information that suggests the increase in participant numbers may be related to the increase in accidents occurring in locations where adventure sport activities are participated in (Scottish Mountain Rescue Annual Reports 2006-2015). Something that is not covered in existing literature is what efforts have been, or could be, implemented in order to address this issue.

This study set out to explore changes that are occurring within the adventure sport industry, and to consider if a response to such could be proposed. A defined hypothesis was not formulated until the study had been commenced, in fact, prior to the commencement of data collection the hypothesis remained in the format of a series of themes which were considered to be of significant enough merit to dedicate time to further exploring.

Because the study was very much focused on producing an output that would not only meet the objectives of the line of inquiry, but that could also be considered a relevant and useful contribution to the fields of design, design thinking and ideation, it was important that the research methodologies implemented took this into consideration. Therefore, the study did not seek to make use of traditional (quantitative) approaches

to data collection, i.e. those that are normally implemented for studies that seek to increase our understanding of sport and participation. Instead, it was hoped that the study could be completed using only qualitative methods, with the exception of drawing on those statistics already in existence as an informative resource.

A significant amount of time was spent identifying and testing the most appropriate qualitative methods. There was also a degree of having to develop the researchers own adventure sport participation skills. This was required in order to fully and efficiently implement the research methods that were eventually selected. During the data collection, it became clear that both recruiting, data collection, and analysis were going to be time consuming and immersive activities. The effect of this was that breaks in data collection were required and periods of time away from the data collection were necessary in order to reflect and to be able to identify, and implement the next stage of data collection. The approach was therefore iterative, and to a degree the study evolved in an organic manner, like most ethnographic studies. However, this did impact on the timescale taken to conduct the study, and it is possible that this approach may not be suitable for all types of study because the time is not available to allow for such activities.

Once the data were collected and analysed, there was a significant amount of output data (i.e. codes, themes) to work with. However, the qualitative data did not produce results that could be used to complete the study. At this stage, the decision was taken to collect further data sets. The best methods to do this were not immediately clear, and a further round of identification, and testing of research methodologies was

required. This too was time consuming, and it is fair to say that the realisation that the qualitative data were not going to be sufficient to inform the study should have been identified earlier. One reason that this did not happen was because the data collection activity was so immersive that it was just not possible to do so. This is a definite limitation, and could have been detrimental to the success of the study.

Once identified, the quantitative methods were implemented, and data collection was commenced. There was a degree of urgency applied to this phase of the data collection because of the timeframe allocated to the study. In any case, the two quantitative methods were successfully implemented, and assisted in further elaborating on the findings from the qualitative phase, and then finally validating them. This produced a complete set of findings that was considered to be sufficient in meeting the requirements of the study, and addressing the research aims. Although there was an element of trial and error involved, and some of the methods, most especially the auto-ethnography, were time-consuming and very immersive, the methods complemented each other, and demonstrated potential to be used as a successful research framework which could be used to explore other themes and theories within different contexts and different disciplines. It could be especially useful for those studies where it is difficult to formulate and define the research question(s), or hypothesis, at the outset of the study. The hybrid methodologies model has demonstrated itself to be very useful when implemented within a cross-discipline study, such as this one.

The study explored lived experiences of adventure sport participants. Taking a macro-view of participants, providers, and also drawing on the researchers own experiences. The findings suggest that there are significant changes occurring within the adventure sport industry, and associated communities. It is likely these can be attributed to increased participant numbers, which have come since the emergence of the *experience economy*. The study found that it is likely there is a relationship between increased participant numbers and increased accidents, which require the assistance of mountain rescue professionals, occurring in locations where people take part in adventure sport activities. Further exploring potential correlations between those measures is a matter of interest for future research.

Key themes emerged and indicated the following:

- i. Participants generally felt there was a lack of existing information available to them.
- ii. Some participants, particularly those newer to participating in adventure sport activities, were identified as not being able to accurately assess their own skill level.
- iii. Having access to the adventure sport community was an asset to participants.

Drawing on design thinking and ideation approaches, the three themes were carefully considered, and problematized. This approach was not taken at the end of data

collection, but rather as a part of the data collection, and analysis processes. Doing this allowed the three themes to be considered both as unique themes and as a collective of themes. Considering them during the data collection and analysis allowed an understanding of the themes to evolve and ideas to be tested in respect of responding to the findings, and designing and offering a solution.

Some of the earlier ideas, for example gender-specific provision and ways to market/promote providers located in rural/remote areas were explored during the data collection phases, however, these were eliminated because they were either already in existence, demonstrated potential to not be useful to adventure sport participants, or were not suitable in providing an appropriate solution that could be used to address the issue. The decision to design a framework that could be useful to both adventure sport participants and providers was realised as being extremely important. This is because, in order to ensure the required sustained use was achieved to permit a sufficient quantity of data to be collected to produce a tangible output, and address one of the key issues identified by the study, it was established as being imperative that the solution be designed to meet the user needs and requirements of both end-users, rather than focusing on just one end-user. This is similar to approaches normally implemented when designing solutions to identified issues.

The framework that has been suggested in this thesis demonstrates potential to provide a solution to all the themes that were identified by the study. Providers of adventure sport activities would be able to gain access to those participants who are most likely to be interested in their product offering. Additionally, they would be able

to identify what participants actually require from them. There is potential to be able to identify and design new product offerings, as well as consider staffing requirements, including training needs for existing members of staff.

Participants would have the ability to gain access to the information that is most relevant to them, as well as being able to develop their skills using a framework that is unique to them and suitable for their needs and requirements. Overall, the solution presents potential to be an appropriate method of data collection and could, providing sufficient data is collected, be used to develop a universal set of guidelines that assist participants in accurately assessing their skill level. These guidelines could be used on an industry-wide basis. This information could also be used to ensure participants are being appropriately catered for on a longer-term basis, and that the industry maintains the economic growth it has experienced as a result of participants emerging from the *experience economy*.

7.1 Future Work

In terms of future work, the study identified a number of themes and interesting strands that present scope for future research. These are discussed where appropriate throughout the thesis. One particular interest was the identification of the need to better understand specific needs associated with the different skill levels of adventure sport participants. The solution suggested in this thesis has potential to assist in developing this understanding, including understanding exactly how and when this can occur. There is also potential to better understand the degree that skill level is reduced

when an adventure sport participant takes a break from participation, including how this differs across skill levels, and the different adventure sport activities. It is possible that some activities allow participants to progress more efficiently, with less potential for a reduction skill level if the participant decides to take a break or is unable to participate for a period of time, for example, off-road trail running versus rock climbing. This intelligence may assist those participants who have a lack of time, or demonstrate a preference for sporadic participation, to identify those adventure sport activities that are the most suitable for their behaviours, and approaches toward participation.

The hybrid methodologies model designed and implemented during this study has demonstrated itself to be useful, and with great potential to be used elsewhere. The process of formulating the research model was time-consuming. However, there is potential to implement the process more succinctly in the future since an understanding of the processes for how to do so has been developed, including the time required to implement, and conducting the data analysis. Had there been an existing understanding of the necessity to implement quantitative methods alongside the qualitative methods, it is possible that the study may have been able to permit, within the timeframe, an exploration, even briefly, of the suggested solution. Being able to do this would have been useful, as it would have been possible to begin considering potential flaws in the system, and considering how these could be addressed. There would also have been potential to explore the skill level of those adventure sports participants who are most likely to make use of the solution. A limitation to the solution is that, if it is used by only one skill level of adventure sport participant, there is potential that data collected from the participants may not produce sufficient intelligence to assist in defining the universal guidance that allows

participants to accurately assess their skill level. In this case, it would be necessary to establish what would be interesting to other skill levels of participants, to ensure they make use of the solution on a long-term basis, and contribute to the success of it.

Appendices

Appendix 1: Full list of adventure sport activities participated in plus locations used during the field study

Appendix 2: Interview Questions

2.1: Pre-defined interview questions

2.2: Participant One additional interview questions

2.3: Participant Two additional interview questions

Appendix 3: Photos of modified kit provided by Narrative Inquiry Participant One

Appendix 3.1: Image of modified nut key (for rock climbing)

Appendix 3.2: Image of modified water pump (for paddle sports)

Appendix 3.3: Image of modified snow pack assessment kit (for winter mountaineering)

Appendix 3.4: Image of modified spray deck (for kayaking)

Appendix 3.5: Image of modified synthetic down jacket

Appendix 3.6: Image of modified jet boil (for expedition cooking)

Appendix 3.7: Image of modified crampons (for winter mountaineering)

Appendix 3.8: Image of modified ice axes (for winter climbing)

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Appendix 3.9: Image of modified tow rope (for paddle sports)

Appendix 4: Photos of modified kit provided by Narrative Inquiry Participant Two

Appendix 4.1: Image of modified mountaineering boots

Appendix 5: Questionnaire – participant information, informed consent and questions

Appendix 6: Validation of User Requirements Table – participant information, informed consent and validation table

Appendix 7: Questionnaire Survey Monkey

Appendix 8: Validation Activity Survey Monkey

Appendix 1: Full list of adventure sport activities participated in plus locations used during the field study

Locations		Activities		
Country	Place	Segment	Activity	
	Cairngorms National Park		Rock climbing	
	Aviemore		Hill walking	
	Dundee area		Trail running	
	Angus Glens		Ultra trail	
	Assynt		Via feratta	
	Fort William		Mountain biking	
	West Coast		Long distance backpacking	
	Glen coe		Bothy trips	
	Torridon		Ridge walking	
	Glenmore		Rock scrambling	
	Knoydart		Mountaineering	
	Great Glen			Skiing
	Fort Augustus			Nordic skiing
	Inverness area			Mixed winter climbing
	Ullapool	Scottish winter mountaineering		
	Wester Ross	Ice climbing		
	Kingussie	Ski touring		
	Newtonmore	Off piste skiing		
	Carrbridge			Gorge scrambling
	Boat of Garten		Sea kayaking	
	Braemar	Air	n/a	
	Ballater			
	Lochnagar			
	Glen Callater			
	Lake District			
	Cumbria			
	Dent			
	Kendal			
	Keswick			

	Ambleside
	Coniston
	Windermere
	Ullswater
	Langdale Valley
	Derwentwater
	North Wales
	Snowdonia
	Plas Y Brenin
	Chamonix, Mont Blanc
	Montreux, Lake Geneva
	Glacier 3000, Les Diablerets
	Grouse Mountain, Vancouver
	Cyprus Mountain, Vancouver
	Sogndal, Norway

Appendix 2: Interview Questions

Appendix 2.1: Pre-defined interview questions

Ref	1.1: Pre-defined interview questions
1.	How would you classify your current involvement with adventure sports?
2.	Is it for recreation?
3.	What would your frequency of participation be?
4.	A full day, or evening?
5.	What is your level of participation? So, would you class yourself as a beginner, or someone more intermediate, or advanced?
6.	What are the reasons for participating in the adventure sports that you chose to participate in?
7.	When did you become involved with adventure sports?
8.	How did you go about beginning to get involved?
9.	Where did you find the information that you needed?
10.	How accessible did you find adventure sports when you first started to try and find information, try and get involved? How accessible and open was it?
11.	What about the expense – was it high, low?
12.	Did anything hold you back?
13.	How have adventure sports had an impact on your life – both positive and negatives?
14.	How is this involvement in adventure sports perceived by your circle of family and friends?
15.	What impact has your involvement in adventure sports had on either your current or your most recent relationship? If applicable.
16.	Is there anything that would have made your transition to becoming an adventure sports participant easier or smoother?
17.	Thinking about the brands that promote themselves as adventure sports brands, is your perception of them along similar lines as the information, sort of being aimed at hardcore, enthusiasts maybe? Do you think those brands sort of promote themselves along the same lines? Maybe even that's perhaps a barrier?
18.	Thinking about the photographic imagery that they use, what's your perception of that?
19.	What about the staff in the stores?

20.	What, if anything, could be done better to encourage other females to participate?
21.	Where do you currently access any information that you need for your activities? Please feel free to specify specific names of websites, magazines or any sources of information that you use.
22.	What sacrifices, if any, have you made in other areas of your life in order to participate in adventure sports? By sacrifices I mean anything – a change, even if it's a positive change, it can still be something you've sacrificed to pursue something else.
23.	What is your opinion of the adventure sports community, and how has this changed since before you were a participant, if it's changed at all?
24.	Are there any pieces of kit that have really been a big part of your transition into adventure sports, that have helped make it more enjoyable, or have made it easier?

Appendix 2.2: Participant One additional interview questions

Ref	1.2: Participant One additional interview questions
1.	So, was it initially for, sort of, health and how you looked?
2.	Has it evolved into something deeper?
3.	Subsidy, or anything, would that have helped – if there was anything, tasters – female only taster sessions?
4.	Even considering that, has it been worth it financially?
5.	How about if the shops were sectioned? Even into different colour zones, not [labelled] beginners, intermediate, expert – if they were sectioned into colour zones, where all the beginner equipment was in one place – would that make it easier?
6.	Do you feel that you are part of the community now?
7.	So, that's three years you've been involved in adventure sports, is that correct?
8.	OK, and you still feel like you are making the transition into the community?
9.	So, image is important?

Appendix 2.3: Participant Two additional interview questions

Ref	1.3: Participant Two additional interview questions
1.	I think you have already covered this, about when you went to university and getting involved in adventure sports, but, how did you go about getting involved in the adventure sports – was it a university club, or...?
2.	Was it easy to ask them? [referring to asking friends for adventure sport activity specific information]
3.	And now, as a professional, how accessible do you find it? Do people, are you approached now to get involved in stuff? Or do you still have to go out and find new stuff, as a professional?
4.	If you wouldn't mind, would you maybe explain what your fear was? Was it safety, or security or did you feel maybe as a female going out on your own it wasn't appropriate to do that? [discussing participating in winter mountaineering activities]
5.	And the support? [referring to support received from family and friends when choosing to participate in adventure sport activities]
6.	Would it be important to you to have someone who was interested in the same things? [in a relationship]
7.	It seems like your transition into adventure sports was quite easy, you had a lot of friends who were involved in it
8.	Would that make a difference? If a guide was female? If you were going on a course?
9.	Would you feel safer with a woman or a man as a guide? In any mountain situation, not just the most challenging.
10.	Do you think females are underrepresented in the adventure sports community?

Appendix 3: Photos of modified kit provided by Narrative Inquiry Participant One

Appendix 3.1: Image of modified nut key (for rock climbing)



Appendix 3.2: Image of modified water pump (for paddle sports)



Appendix 3.3: Image of modified snow pack assessment kit (for winter mountaineering)



Appendix 3.4: Image of modified spray deck (for kayaking)



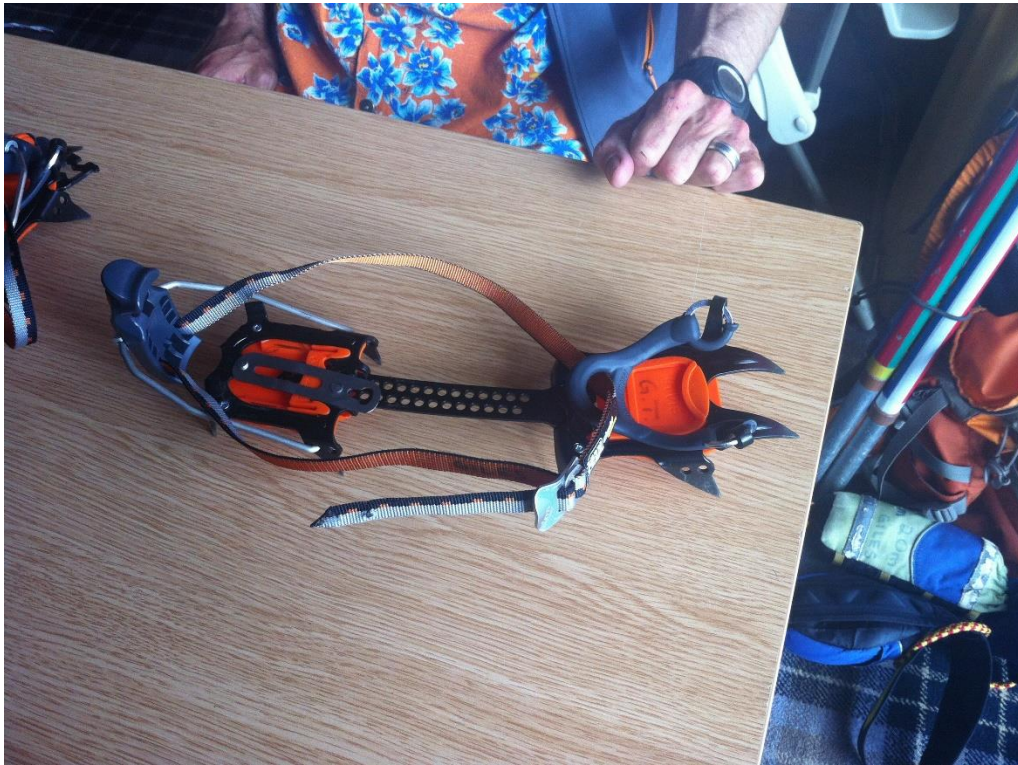
Appendix 3.5: Image of modified synthetic down jacket



Appendix 3.6: Image of modified jet boil (for expedition cooking)



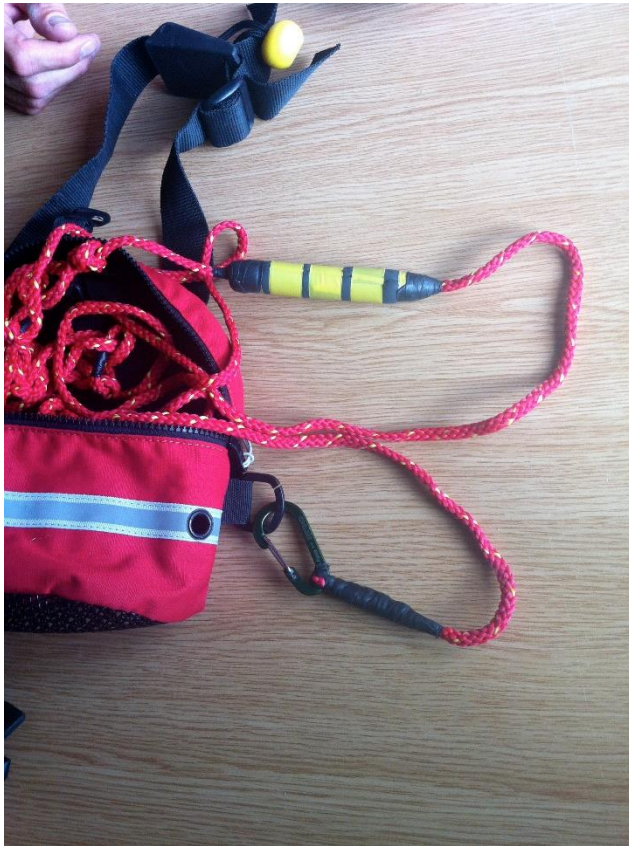
Appendix 3.7: Image of modified crampons (for winter mountaineering)



Appendix 3.8: Image of modified ice axes (for winter climbing)



Appendix 3.8: Image of modified tow rope (for paddle sports)



Appendix 3.9: Image of modified tow rope (for paddle sports)



Appendix 4: Photos of modified kit provided by Narrative Inquiry Participant Two

Appendix 4.1: Image of modified mountaineering boots



Appendix 5: Questionnaire – participant information, informed consent and questions

Exploring how design could be used within the adventure sport industry April 4, 2016

About the study

Using a mixed-methods approach to explore how design could be used as a tool to influence behaviour change within the adventure sport industry in Scotland

The adventure sport industry has been a dramatic increase in participant numbers over the past ten years or so, with that has come many positives. However, there has also been an increase in concern for participant safety. This could be attributed to a number of factors, including lack of awareness of risks associated with participating in adventure sport, lack of appropriate training and inability to access resources to allow one to progress as an adventure sport participant in the safest manner. Additionally motivations for becoming/being an adventure sport participant, and approaches to such are now much more varied, and as a result the 'adventure sport community' is becoming more diverse and potentially dispersed.

As with any change, there are pros and cons attached to all perspectives and opinions, this study has in the first instance utilised qualitative research methodologies (ethnography and auto-ethnography (observational, participatory and field-based activities), interviews and narrative inquiry interviews) to explore the above hypothesis. Findings were analysed using a thematic coding process and used to inform the second phase of the study; which intends to either validate or eliminate strands of interest which emerged from the first (qualitative) phase of the study.

The attached questionnaire is the first element of the quantification phase; once a sufficient sample of responses has been gathered, collected data will be analysed and findings used for formulate a validation exercise. Findings from the validation exercise will be used to inform the design of tool which may assist in changing behaviours in relation to safe approaches (to participation) within the adventure sport industry and associated communities.

Participant Consent

I agree to take part in the above University of Abertay Dundee *postgraduate* research project. I have read and understood the full information sheet provided and have also had further opportunity to ask questions. I understand that agreeing to take part means that:

- I participate in a single session (complete only one questionnaire) and following debriefing
- I am over the age of 18
- I may withdraw my participation at any time
- I am aware of whom to contact for further information regarding this study:

Sarah Morton: 1207627@abertay.ac.uk

Data Protection

I understand that any information I provide is confidential and anonymous, and that no identifiable information will be disclosed in any reports on the project, or to any other part in accordance with the Data Protection Act 1998.

Withdrawal from the study

I understand that my participation is voluntary, that I can chose not to participate in part or all of the project, and that I can withdraw at any stage of the project.

V1.3

1

Questionnaire

1. Name and email (optional – please provide if you wish to participate in subsequent phases of the study):
2. Age:
3. Activities:
4. Years participating:
5. Level (novice/intermediate/advanced/provider):

Using an importance scale of 1 (least important) to 5 (most important) please indicate how important you believe the following to be to an adventure sport participant:

Description	Component	Score
U_N1		
Information about adventure sport activities	What activities are available	
	Locations	
	Access information	
	Reliable and trustworthy information (weather/conditions/routes/equipment)	
U_N2		
Information about adventure sport locations	Where to participate based on skill level	
	Where to participate based on activity choice	
	What to expect in different locations	
	What facilities are available	
U_N3		
Ways to build relationships with other adventure sport participants	Based on location	
	Based on activity choice	
	Based on skill level	
	Access to [adventure sport] community information	
	Access to beta information	
	Links to other [adventure sport] community members	
U_N4		
Information about how to develop adventure sport specific skills	Most appropriate skills courses for level/needs	
	Where [locations] skills courses are	
	Links to different skills providers based on individual needs	
	Guidance to select a skills course	
U_N5		
Ability to monitor adventure sport participation and progress	Facility to record activity [log book]	
	Facility that matches skill level/ability to participation options	
	Framework for progression based on individual needs	
	Suggestions for most appropriate progression routes	

If there is anything else that would be attractive and/or important to you please make a note of this below:

Participant name	
Participant signature	
Date	

Researcher name	
Researcher signature	
Date	

Appendix 6: Validation of User Requirements Table – participant information, informed consent and validation table

Exploring how design could be used within the adventure sport industry

May 18, 2016

About the study

Using a mixed-methods approach to explore how design could be used as a tool to influence behaviour change within the adventure sport industry in Scotland

The adventure sport industry has seen a dramatic increase in participant numbers over the past ten years or so, with that has come many positives. However, there has also been an increase in concern for participant safety. This could be attributed to a number of factors, including lack of awareness of risks associated with participating in adventure sport, lack of appropriate training, and inability to access resources to allow one to progress as an adventure sport participant in the safest manner. Additionally motivations for becoming/being an adventure sport participant, and approaches to such are now much more varied, and as a result the 'adventure sport community' is becoming more diverse and potentially dispersed.

As with any change, there are pros and cons attached to all perspectives and opinions, this study has in the first instance utilised qualitative research methodologies (ethnography and auto-ethnography (observational, participatory and field-based activities), interviews and narrative inquiry interviews) to explore the above hypothesis. Findings were analysed using a thematic coding process and used to inform the second phase of the study; which intends to either validate or eliminate strands of interest which emerged from the first (qualitative) phase of the study.

Thank you for taking the time to complete the first element (questionnaire) of this phase of the study, and for indicating an interest in participating in subsequent parts of the study.

The attached Validation of Requirements table has been formulated based on the analysis of the questionnaire and findings which emerged following completion of analysis. During the questionnaire participants were asked to score a series of components, the scores were analysed and it was anticipated that those components which received a low score (i.e. were not thought to be important to adventure sport participants) would be extracted from the process. However, all components were considered to be at least of medium importance and as such were used to formulate a series of user requirements that may form individual elements of a tool (possibly within a smartphone application or website) that could be used by adventure sport participants.

Findings from the validation exercise will be used to inform the design of the tool which may assist in changing behaviours in relation to safe approaches (to participation) within the adventure sport industry and associated communities.

Participant Consent

I agree to take part in the above University of Abertay Dundee *postgraduate* research project. I have read and understood the full information sheet provided and have also had further opportunity to ask questions. I understand that agreeing to take part means that:

- I participate in a single session (complete only one questionnaire) and following debriefing
- I am over the age of 18

- I may withdraw my participation at any time
- I am aware of whom to contact for further information regarding this study:

Sarah Morton – 1207627@abertav.ac.uk

Data Protection

I understand that any information I provide is confidential and anonymous, and that no identifiable information will be disclosed in any reports on the project, or to any other part in accordance with the Data Protection Act 1998.

Withdrawal from the study

I understand that my participation is voluntary, that I can chose not to participate in part or all of the project, and that I can withdraw at any stage of the project.

Validation of (end-user) Requirements

1. Name:
2. Email (optional):
3. Age:
4. Location (optional):

Using the **YES** or **NO** columns, please indicate if you believe the following components (possibly within a smartphone application or website) to be of interest to an adventure sport participant. If you wish to include any comments in respect of a particular component, please indicate such within the **COMMENT** column.

Description	Requirement ID	Component	Yes	No	Comment
U_N1	U_R1				
<i>Information about adventure sport activities</i>	U_R1.1	A list of adventure sport activities that are available to participate in, in Scotland			
	U_R1.2	A list of locations, linked to the list of activities, that it is possible to participate in adventure sport activities in Scotland			

	U_R1.3	Information about how to gain access to adventure sport activities with a particular locations (e.g. information about a rock climbing venue including car parking, the walk in route, any other facilities etc.)			
	U_R1.4	Information about things such as weather/conditions/routes/equipment that is reliable and trustworthy			
U_N2	U_R2				
Information about adventure sport locations	U_R2.1	Information about where (location) to participate in a specific adventure sport activity based on skill level			
	U_R2.2	Information about where (location) to participate in a specific adventure sport activity based on choice of activity			
	U_R2.3	Reliable information about what to expect in different locations including up-to-date details (contributed by members of the community) about things such as fallen trees, route/path obstacles, closed routes etc.			
	U_R2.4	A list of facilities that are available in specific locations, such as, camping sites, food/drink outlets, toilets, petrol stations etc.			
U_N3	U_R3				
Ways to build relationships with other adventure sport participants	U_R3.1	Suggestions of other adventure sport participants to link up/connect with based locally (permission would be asked to allow ones details to appear within suggestions, and suggestions would be offered based on a set boundary (e.g. 10 miles) from ones GPS location or location could be manually entered ahead of a trip)			
	U_R3.2	Suggestions of other adventure sport participants to link up/connect with based on what adventure sport activity(ies) are participated in or want to be participated in (permission would be asked to allow ones details to appear within suggestions, and suggestions would be offered based on a set boundary (e.g. 10 miles) from ones GPS location or location could be manually entered ahead of a trip)			
	U_R3.3	Suggestions of other adventure sport participants to link up/connect with based on skill level including suggestions of a similar skill level and higher skill level (permission would be asked to allow ones details to appear within suggestions, and suggestions would be offered based on a set boundary (e.g.			

		10 miles) from ones GPS location or location could be manually entered ahead of a trip)			
	U_R3.4	A forum-style facility that members of the adventure sport community can contribute to about things such as events, meet-ups, trips etc.			
	U_R3.5	A forum-style facility that members of the adventure sport community can contribute beta information to			
	U_R3.6	A facility that allows members of the adventure sport community ways to share their experiences (blogs, stories, photos, videos) in one place that is easy to navigate around and find the appropriate information required/desired			
	U_R3.7	A facility that allows links/connections to be made with other members of the adventure sport community			
U_N4	U_R4				
Information about how to develop adventure sport specific skills	U_R4.1	Suggestions for the most appropriate skills courses based on individual skill level and unique needs e.g. a course for an intermediate level participant that allows them to learn about rick climbing gear placement on a specific type of rock			
	U_R4.2	Information about the location of the most appropriate skills courses to meet individual needs (location + skill level + needs)			
	U_R4.3	Links to a selection of skills courses providers based on the most appropriate for the individual adventure sport participant (provider + skill level + needs)			
	U_R4.4	A framework that assists in selecting the most appropriate skills course and provider based on individual needs			
	U_R4.5	Detailed information about what to expect from a skills course including learning outcomes, the type of guidance to expect to receive, detail about the location including the local area etc.			
U_N5	U_R5				
Ability to monitor adventure sport	U_R5.1	A log book style facility that allows the adventure sport participant to record the activities they have participated in including activity, location, date, what they thought of it			
	U_R5.2	A facility that matches participant skill level and ability with suggestions and options for participation			

participation and progress	U_R5.3	A framework for progression based on individual participant specific needs			
	U_R5.4	Information about progression routes including detail about how to achieve individual objectives			
	U_R5.5	A facility that suggest the most appropriate progression routes based on skill level, ability and participant specific objectives			

If there is anything else that would be attractive and/or important to you please make a note of this below:

Participant name	
Participant signature	
Date	

Researcher name	
Researcher signature	
Date	

Appendix 7: Questionnaire Survey Monkey (screen shots from webpage:
<https://www.surveymonkey.co.uk/r/GH3NVYZ>)

Adventure Sport Participation

Adventure Sport Participation in Scotland

Using a mixed-methods approach to explore how design could be used as a tool to influence behaviour change within the adventure sport industry in Scotland

The adventure sport industry has seen a dramatic increase in participant numbers over the past ten years or so, and with that has come many positives. However, there has also been an increase in concern for participant safety. This could be attributed to a number of factors, including lack of awareness of risks associated with participating in adventure sport, lack of appropriate training, and inability to access resources to allow one to progress as an adventure sport participant in the safest manner. Additionally motivations for becoming/being an adventure sport participant, and approaches to such, are now much more varied, and as a result the 'adventure sport community' is becoming more diverse and potentially dispersed.

As with any change, there are pros and cons attached to all perspectives and opinions, this study has, in the first instance, utilised qualitative research methodologies (ethnography and auto-ethnography (observational, participatory and field-based activities), interviews, and narrative inquiry interviews) to explore the above hypothesis. Findings were analysed using a thematic coding process and used to inform the second phase of the study; which intends to either validate or eliminate strands of interest which emerged from the first (qualitative) phase of the study.

The attached questionnaire is the first element of the quantification phase; once a sufficient sample of responses has been gathered, collected data will be analysed and findings used to formulate a validation exercise. Findings from the validation exercise will be used to inform the design of a tool which may assist in changing behaviours in relation to safe approaches (to participation) within the adventure sport industry and associated communities.

Participant Consent

I agree to take part in the above University of Abertay Dundee postgraduate research project. I have read and understood the full information sheet provided and have also had further opportunity to ask questions. I understand that agreeing to take part means that:

- I participate in a single session (complete only one questionnaire) and following debriefing
- I am over the age of 18
- I may withdraw my participation at any time
- I am aware of whom to contact for further information regarding this study:

Sarah Morton: 1207627@abertay.ac.uk

Data Protection

I understand that any information I provide is confidential and anonymous, and that no identifiable information will be disclosed in any reports on the project, or to any other part in accordance with the Data Protection Act 1998.

Withdrawal from the study

I understand that my participation is voluntary, that I can chose not to participate in part or all of the project, and that I can withdraw at any stage of the project.

1. Personal details

Name:

Email address:

Age:

Would you be interested in participating in future research relating to this study?

2. What adventure sport activities do you participate in on a regular basis?

3. How many years have you been an adventure sport participant?

4. How would you describe your level of participation?

- Beginner/novice
- Intermediate
- Advanced
- Professional/provider

5. On a scale of 1 (least important) to 5 (most important) please indicate how important you believe information about adventure sport activities to be to an adventure sport participant:

	1	2	3	4	5
What activities are available	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Locations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Access information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reliable and trustworthy information (weather/conditions/routes/equipment)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. On a scale of 1 (least important) to 5 (most important) please indicate how important you believe information about adventure sport locations to be to an adventure sport participant:

	1	2	3	4	5
Where to participate based on skill level	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Where to participate based on activity choice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What to expect in different locations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What facilities are available	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. On a scale of 1 (least important) to 5 (most important) please indicate how important you believe having ways to build relationships with other adventure sport participants is to an adventure sport participant:

	1	2	3	4	5
Based on location	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Based on activity choice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Based on skill level	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having access to [adventure sport] community information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having access to beta information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having ways to share experiences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having links to other [adventure sport] community members	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Having links to other [adventure sport] community members	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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8. On a scale of 1 (least important) to 5 (most important) please indicate how important you believe information about how to develop adventure sport specific skills to be to an adventure sport participant:

	1	2	3	4	5
Most appropriate skills courses for individual level/needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Where [locations] skills courses are	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Links to different skills providers based on individual needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Guidance to select a skills course	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What to expect from a skills course	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. On a scale of 1 (least important) to 5 (most important) please indicate how important you believe being able to monitor adventure sport participation and progress to be to an adventure sport participant:

	1	2	3	4	5
Facility to record activity [log book]	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facility that matches skill level/ability to participation options	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Framework for progression based on individual needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Information about progression routes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Suggestions for most appropriate progression routes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Suggestions for most appropriate progression routes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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10. If there is anything else that would be attractive and/or important to you please make a note of this below:

Done

Powered by
 **SurveyMonkey**
 See how easy it is to [create a survey](#).

Appendix 8: Validation Activity Survey Monkey (screen shots from webpage:
<https://www.surveymonkey.co.uk/r/L892DNZ>)

Adventure Sport Participation - Part Two

Adventure Sport Participation - Part Two

Using a mixed-methods approach to explore how design could be used as a tool to influence behaviour change within the adventure sport industry in Scotland

The adventure sport industry has seen a dramatic increase in participant numbers over the past ten years or so, and with that has come many positives. However, there has also been an increase in concern for participant safety. This could be attributed to a number of factors, including lack of awareness of risks associated with participating in adventure sport, lack of appropriate training, and inability to access resources to allow one to progress as an adventure sport participant in the safest manner. Additionally motivations for becoming/being an adventure sport participant, and approaches to such, are now much more varied, and as a result the 'adventure sport community' is becoming more diverse and potentially dispersed.

As with any change, there are pros and cons attached to all perspectives and opinions, this study has, in the first instance, utilised qualitative research methodologies (ethnography and auto-ethnography (observational, participatory and field-based activities), interviews, and narrative inquiry interviews) to explore the above hypothesis. Findings were analysed using a thematic coding process and used to inform the second phase of the study; which intends to either validate or eliminate strands of interest which emerged from the first (qualitative) phase of the study.

Thank you for taking the time to complete the first element (questionnaire) of this phase of the study, and for indicating an interest in participating in subsequent parts of the study.

The attached Validation of Requirements table has been formulated based on the analysis of the questionnaire and findings which emerged following completion of analysis. During the questionnaire participants were asked to score a series of components, the scores were analysed and it was anticipated that those components which received a low score (i.e. were not thought to be important to adventure sport participants) would be extracted from the process. However, all components were considered to be at least of medium importance, and as such were used to formulate a series of user requirements that may form individual elements of a tool (possibly digital) that could be used by adventure sport participants.

Findings from the validation exercise will be used to inform the design of the tool which may assist in changing behaviours in relation to safe approaches (to participation) with the adventure sport industry and associated communities.

Participant Consent

I agree to take part in the above University of Abertay Dundee postgraduate research project. I have read and understood the full information sheet provided and have also had further opportunity to ask questions. I understand that agreeing to take part means that:

- I participate in a single session (complete only one validation table) and following debriefing
- I am over the age of 18
- I may withdraw my participation at any time
- I am aware of whom to contact for further information regarding this study:

Sarah Morton: 1207627@abertay.ac.uk

I agree to take part in the above University of Abertay Dundee postgraduate research project. I have read and understood the full information sheet provided and have also had further opportunity to ask questions. I understand that agreeing to take part means that:

- I participate in a single session (complete only one validation table) and following debriefing
- I am over the age of 18
- I may withdraw my participation at any time
- I am aware of whom to contact for further information regarding this study:

Sarah Morton: 1207627@abertay.ac.uk

Data Protection

I understand that any information I provide is confidential and anonymous, and that no identifiable information will be disclosed in any reports on the project, or to any other part in accordance with the Data Protection Act 1998.

Withdrawal from the study

I understand that my participation is voluntary, that I can chose not to participate in part or all of the project, and that I can withdraw at any stage of the project.

1. Name

2. Email address

3. Age

4. Where do you normally reside?

5. Thinking about information about adventure sport activities, please indicate YES or NO if the following components would be of interest to an adventure sport participant

	Yes	No
A list of adventure sport activities that are available to participate in, in Scotland	<input type="radio"/>	<input type="radio"/>
A list of locations, linked to the list of activities, that it is possible to participate in adventure sport activities in Scotland	<input type="radio"/>	<input type="radio"/>
Information about how to gain access to adventure sport activities within particular locations (e.g. information about a rock climbing venue including where to park, the walk in route, any other facilities etc.)	<input type="radio"/>	<input type="radio"/>
Information about things such as weather/conditions/routes/equipment that is reliable and trustworthy	<input type="radio"/>	<input type="radio"/>

Comments

6. Thinking about information about adventure sport locations, please indicate YES or NO if the following components would be of interest to an adventure sport participant

	Yes	No
Information about where (location) to participate in a specific adventure sport activity based on skill level	<input type="radio"/>	<input type="radio"/>
Information about where (location) to participate in a specific adventure sport activity based on choice of activity	<input type="radio"/>	<input type="radio"/>
Reliable information about what to expect in different locations including up-to-date details (contributed by	<input type="radio"/>	<input type="radio"/>

activity

Reliable information about what to expect in different locations including up-to-date details (contributed by members of the community) about things such as windblow, route/path obstacles, closed routes etc.

A list of facilities that are available in specific locations, such as, camping sites, food/drink outlets, toilets, petrol stations etc.

Comments

7. Thinking about information about ways to build relationships with other adventure sport participants, please indicate YES or NO if the following components would be of interest to an adventure sport participant

Yes

No

Suggestions of other adventure sport participants to link up/connect with based locally or within a specified boundary, e.g. 10 miles from current/planned location (permission would be asked to allow this)

Suggestions of other adventure sport participants to link up/connect with based on what adventure sport activity(ies) are participated in or want to be participated in based locally or within a specified boundary (permission would be asked)

be asked)

Suggestions of other adventure sport participants to link up/connect with based on skill level including similar and higher level based locally or within a specified boundary (permission would be asked)

A forum-style facility that members of the adventure sport community can contribute to about things such as, events, meet-ups, trips etc.

A forum-style facility that members of the adventure sport community can contribute beta information to

A facility that allows members ways to share the experiences (blogs, photos, videos, stories) in one place that is easy to navigate around and find the appropriate information required/desired

A facility that allows links/connections to be made with other members of the adventure sport community

Comments

8. Thinking about information about ways to develop adventure sport specific skills, please indicate YES or NO if the following components would be of interest to an adventure sport participant

Yes

No

8. Thinking about information about ways to develop adventure sport specific skills, please indicate YES or NO if the following components would be of interest to an adventure sport participant

	Yes	No
Suggestions for the most appropriate skills courses based on individual skill level and unique needs/objectives	<input type="radio"/>	<input type="radio"/>
Information about the location of the most appropriate skills courses to meet individual needs/objectives	<input type="radio"/>	<input type="radio"/>
Links to a selection of skills courses providers based on the most appropriate ones for the individual participant and their unique needs/objectives	<input type="radio"/>	<input type="radio"/>
A framework that assists in selecting the most appropriate skills course and provider based on individual needs	<input type="radio"/>	<input type="radio"/>
Detailed information about what to expect from a skills course including learning outcomes, the type of guidance to expect to receive, details about the location including the local area etc.	<input type="radio"/>	<input type="radio"/>

Comments

9. Thinking about information about ways to monitor adventure sport participation and progress, please indicate YES or NO if the following components would be of interest to an adventure sport participant

	Yes	No
A log book style facility that allows the participant to record the activities they have participated in including activity, location, date, what they thought of it, upload photos/videos/narrative	<input type="radio"/>	<input type="radio"/>
A facility that matches participant skill level and ability with suggestions and options for participation	<input type="radio"/>	<input type="radio"/>
A framework for progression based on individual participant specific needs	<input type="radio"/>	<input type="radio"/>
Information about progression routes including detail about how to achieve individual objectives	<input type="radio"/>	<input type="radio"/>
A facility that suggests the most appropriate progression routes based on skill level, ability and participant specific objectives	<input type="radio"/>	<input type="radio"/>

10. If you have any other comments please indicate these below. Thank you for taking the time to complete.

Done

List of References

- Ahmed, S. M., & Palermo, A. S., 2010, Community Engagement in Research: frameworks for Education and Peer Review, *American Journal of Public Health* 100:8, pp. 1380-1387.
- Alvesson, M., & Sandberg, J., 2011, Generating Research Questions Through Problematization, *Academy of Management Review* 36:2, pp. 247-271.
- Anderson, L., & Austin, M., 2011, Auto-ethnography in leisure studies, *Journal of Leisure Studies* 31:2, pp.131-146.
- Anderson, L., 2006, Analytic Autoethnography, *Journal of Contemporary Ethnography* 35:4, pp. 373-395.
- Apter, M. J., 1989, *Reversal theory: Motivation, emotion and personality*, Taylor & Frances/Routledge Florence, KY, viii, pp. 208.
- Beck, U., 1986, *RISIKOGESELLSCHAFT*, Suhrkamp.
- Bennett, G. et al., 2002, Action Sports Sponsorship Recognition, *Sport Marketing Quarterly* 11:3, pp. 174-186.
- Braun, V., & Clarke, V., 2006, Using thematic analysis in psychology, *Qualitative Research in Psychology* 3:2, pp. 77-101.
- Breivik, G., 2010, Trends in adventure sports in a post-modern society, *Sport in Society: Cultures, Commerce, Media, Politics* 13:2, pp. 260-273.
- British Mountaineering Council, 2003, Participation Statistics [online], Available at: https://www.thebmc.co.uk/bmcNews/media/u_content/File/press/factsheets/ParticipationStats03.pdf.
- Brymer, E., & Schweitzer, R., 2013, The search for freedom in extreme sports: A phenomenological exploration, *Psychology of Sport and Exercise* 14:6, pp.865-873.
- Brymer, E., 2010, Risk taking in Extreme Sports: A phenomenological perspective, *Annals of Leisure Research* 13:1, pp.218-238.
- Charmaz, K., 2006, *Constructing Grounded Theory: a practical guide through qualitative analysis*, Sage, London.

- Coalter, F., & Dowers, S., 2006, *An analysis of regional variation sports participation in Scotland*, Research Report 105, SportScotland.
- Cohen, et al., 2000, *Hermeneutic Phenomenological Research: A Practical Guide for Nurse Researchers*, Sage, Thousand Oaks.
- Creswell, J. W., 1998, *Qualitative Inquiry and Research Design: Choosing amongst five traditions*, Sage, Thousand Oaks CA.
- Creswell, J., 2013, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, Sage California, Fourth Edition.
- Dickson, T., & Dolnicar, S., 2004, No risk, no fun the role of perceived risk in adventure tourism, *CAUTHE 2004: Creating Tourism Knowledge* (Brisbane, Qld), Common Grounds Publishing (conference paper, pp. 184-189).
- Draucker et al., 2007, Theoretical Sampling and Category Development in Grounded Theory, *Qualitative Health Research October* 17:8, pp. 1137-1148.
- Eckert, C. J., 1990, Economic Development in Historical Perspective, 1945-1990, In *Korea old and new: A history*, ed. by C. J. Eckert, K. Lee, Y. Lew, M. Robinson, and E.W. Wagner, 388-418, Seoul, Korea, the Korea Institute, Harvard University.
- Elias, N. and Dunning, E., 1970. The quest for excitement in unexciting societies. *The cross-cultural analysis of sport and games*, pp.31-51.
- Ellis, C., 2004, *The ethnographic I: A methodological novel about autoethnography*, Rowman Altamira.
- Ellis, C.S., & Bochner, A., 2000, *Autoethnography, personal narrative, reflexivity: Researcher as subject*.
- Fawcett, J., & Downs, F. S., 1986, *The Relationship of Theory and Research*.
- Feldman, U. et al., 1993, Quantifying the experience of color, *Proceedings SPIE 1913, Human Vision, Visual Processing, and Digital Display IV*, pp. 537.
- Flood, A., 2010, Understanding phenomenology. *Nurse Researcher* 17:2, pp.7.
- Florin, J. et al., 2003, A Social Capital Model of High-Growth Ventures, *Academy of Management Journal* 46:3, pp. 374-384.
- Glaser, B., & Laudel, G., 2013, Life With and Without Coding: Two Methods for Early-Stage Data Analysis in Qualitative Research Aiming at Casual Explanations, *Forum: Qualitative Social Research* 14:2.

- Glaser, B., & Strauss, A., 1967, *The Discovery of Grounded Theory: Strategies for qualitative research*, Aldine, London.
- Greenwood, C., & Yeoman, I., 2007, *What will activity and adventure tourism look like in 2015?*, VisitScotland.
- Heidegger, M., 1962, *Being and Time*, New York: HarperOne (Original version: 1927).
- Holland-Smith, D., & Olivier, S., 2013, "You don't understand us!" An inside perspective on adventure climbing, *Sport in Society: Culture, Commerce, Media, Politics* 16:9, pp. 1091-1104.
- Horvath, P., & Zuckerman, M., 1993, Sensation seeking, risk appraisal, and risky behaviour, *Personality and individual differences* 14:1, pp. 41-52.
- Jasper, M. A., 1994, Issues in phenomenology for researchers of nursing." *Journal of Advanced Nursing* 19:2, pp. 309-314.
- Jourand, S. M., 1968, *Disclosing Man to Himself*, Van Nostrand, California.
- Jourand, S. M., 1971, *Self Disclosure: An Experimental Analysis of the Transparent Self*, Wiley-Interscience, Michigan.
- Kelley, T., & Littman, J., 2005, *The Ten Faces of Innovation: IDEO's Strategies for Defeating the Devil's Advocate and Driving Creativity Throughout Your Organization*, IDEO Currency/Doubleday.
- Kerr, J., & Mackenzie, S., 2012, Multiple motives for participating in adventure sports, *Psychology of Sport and Exercise* 13:5, pp.649-657.
- Kvale, S., 1996, *InterViews: An Introduction to Qualitative Research Interviewing*, Sage Publications, Thousand Oaks, CA.
- Llewellyn, D. J., & Sanchez, X., 2008, Individual differences and risk taking in rock climbing, *Psychology of Sport & Exercise* 9:4, pp. 413-426.
- Marshall, C., & Rossman, G. B., 2014, *Designing Qualitative Research*, Sage Publications.
- Maslow, A. H., 1954 and 1970, *Motivation and Personality*, Harper.

- Maslow, A. H., 1966 and 2002, *The Psychology of Science: A Reconnaissance*, Maurice Bassett Publishing.
- Moustakas, C. E., 1971, *Individuality and encounter: a brief journey into loneliness and sensitivity groups*, H. A. Doyle Publication Co.
- Moustakas, C. E., 1990, *Phenomenological research methods*, Sage, Thousand Oaks.
- Moustakas, C. E., 1994, *Heuristic Research: Design, Methodology and Application*, Sage, California.
- Muncey, T., 2008, Doing autoethnography, *International Journal of Qualitative Methods* 4:1, pp.69-86.
- Munhall P. L., & Oiler Boyd, C., 1993, *Nursing Research: A Qualitative Perspective* (Second edition), Appleton Century Crofts, Norwalk.
- Obenour, W. L., 2004, Understanding the meaning of the 'journey' to budget travellers, *International Journal of Tourism Research* 6:1, pp. 1-15.
- Osborne, J. W., 1994, Some similarities and differences among phenomenological and other methods of psychological research, *Canadian Psychology* 35:2, pp. 167-189.
- Pace, S., 2012, Writing the self into research using grounded theory analytic strategies in autoethnography, *Journal of writing and writing courses* 13, pp. 1-15.
- Page, S., 2003, The market for adventure tourism in Perthshire and evaluation of the Perthshire activity days product, Unpublished Report for Perthshire Tourism Board. University of Stirling.
- Pain, M. T. G., & Pain, M. A., 2005, Essay: Risk talking in sport, *The Lancet* 366:1 pp. S33-S34.
- Pernecky, T., & Jamal, T., 2010, (Hermeneutic) phenomenology in tourism studies. *Annals of Tourism Research* 37:4, pp.1055-1075.
- Pine, B. J., & Gilmore, J. H., 1999, *The experience economy: Work is theatre & every business a stage*, Harvard Business Review Press, Boston.
- Poullsson, S. H. G., & Kale, S. H., 2004, The Experience Economy and Commercial Experiences, *The Marketing Review* 4:3, pp. 267-277.
- Puchan, H., 2004, Living "extreme": Adventure sports, media and commercialisation, *Journal of Communication Management* 9:2, pp.171-178.

- Qualman, E., 2012, *Socialnomics: How Social Media Transforms the Way We Live and Do Business*, John Wiley & Sons, New Jersey (2nd Edition).
- Ritchie, B. W., et al., 2005, *Tourism research methods: Integrating theory with practice*. Wallingford: CABI Publishing.
- Rickly-Boyd, J. M., 2012, Lifestyle Climbing: Toward existential authenticity, *Journal of Sport and Tourism*, 17:2, pp. 85-104
- Saldana, J., 2009, *The Coding Manual for Qualitative Researchers*, Sage, London.
- Salk, J., 1983, *Anatomy of Reality*, Praeger.
- Sanders, E., 2002, *Design and the Social Sciences: Making Connections*, Taylor & Francis London (Chapter 1).
- Sands, R. R., 1999, *Sport and Culture: At Play in the Fields of Anthropology*, Pearson Custom Publication.
- Sands, R. R., 2002, *Sport Ethnography*, Human Kinetics.
- Schmitt, B. H., 1999, *Experiential Marketing*, New York: The Free Press.
- Schuller, T. et al., 2000, *Social Capital: Critical Perspectives*. Oxford University Press, UK.
- Scottish Household Survey, 2014, Scottish Government [online] Available at: <http://www.gov.scot/Publications/2015/08/3720>.
- Scottish Mountain Rescue, *Annual Report 2006* [online] Available at: <http://www.scottishmountainrescue.org/wp-content/uploads/2014/10/MRCofS-Stats-2006.pdf>.
- Scottish Mountain Rescue, *Annual Report 2007* [online] Available at: <http://www.scottishmountainrescue.org/wp-content/uploads/2014/10/MRCofS-Stats-2007.pdf>.
- Scottish Mountain Rescue, *Annual Report 2008* [online] Available at: <http://www.scottishmountainrescue.org/wp-content/uploads/2014/10/Scottish-Mountain-accidents-2008.pdf>.
- Scottish Mountain Rescue, *Annual Report 2009* [online] Available at: <http://www.scottishmountainrescue.org/wp-content/uploads/2014/10/MRCofS-final-report-2009.pdf>.

Scottish Mountain Rescue, *Annual Report 2010* [online] Available at: <http://www.scottishmountainrescue.org/wp-content/uploads/2014/10/Annual-report-2010.pdf>.

Scottish Mountain Rescue, *Annual Report 2011* [online] Available at: <http://www.scottishmountainrescue.org/wp-content/uploads/2012/07/Annual-Report-2011-v5Final.pdf>.

Scottish Mountain Rescue, *Annual Report 2012* [online] Available at: <http://www.scottishmountainrescue.org/wp-content/uploads/2014/04/Annual-Report-2012Finalv2-2.pdf>.

Scottish Mountain Rescue, *Annual Report 2013* [online] Available at: <http://www.scottishmountainrescue.org/wp-content/uploads/2015/03/Annual-Report-2013v32-.pdf>.

Scottish Mountain Rescue, *Annual Report 2014* [online] Available at: <http://www.scottishmountainrescue.org/wp-content/uploads/2016/02/Stats-2014-Final1.pdf>.

Scottish Mountain Rescue, *Annual Report 2015* [online] Available at: <http://www.scottishmountainrescue.org/wp-content/uploads/2016/12/Stats-2015-v2-Issued-16.pdf>

Seidman, I. E., 1991, *Interviewing as Qualitative Research*, Teachers' College Press, New York.

Sharp, B., 2007, *Scottish Mountaineering Incidences (1996-2005)*, Sportscotland, Research Report 109.

Smith, J. A., et al., 2009, *Interpretive Phenomenological Analysis: Theory, Method and Research*, Sage, London.

Sport England, 2015, *Getting Active Outdoors: A study of Demography, Motivation, Participation and Provision in Outdoor Sport and Recreation in England*

Statista, 2016, *Leading social networks worldwide as of April 2016, ranked by number of active users (in millions)* [online] Available at: <http://www.statista.com/statistics/272014/global-social-networks-ranked-by-number-of-users/>.

- Taylor, S., 2011 'Extending the Dream Machine': Understanding people's participation in mountain biking, *Annals of Leisure Research* 13:1-2, pp. 259-281.
- Thomas, G., 2010, Doing case study: Abduction not induction, phronesis not theory, *Qualitative inquiry* 16:7, pp. 575-582.
- Tucker, J., 2011, Social Signals, Personal Choices: Matching Messages with Motives, Centers for Disease Control and Prevention (CDC) National Conference on Health Communication, Marketing, and Media [online] Available at: <https://www.slideshare.net/4tuckertalk/social-signals-personal-choices-matching-messages-with-motives>
- Veal, A. J., 1992, *Research methods for leisure and tourism*. Essex: Longman Group UK Limited.
- Veryzer, R. W., & Borja de Mozota, B., 2005, The Impact of User-Orientated Design on New Product Development: An Examination of Fundamental Relationships, *The Journal of Product Innovation Management* 22:2, p. 128-143.
- Wenger, W., 2000, Communities of Practice and Social Learning Systems, *Organization* 7:2, pp. 225-246.
- West, A., & Allin, L., 2010, Chancing your arm: The meaning of risk in rock climbing, *Sport in Society: Cultures, Commerce, Media, Politics [Special Issue: The Consumption and Representation of Lifestyle Sports]* 13:7-8, pp. 1234-1248.
- Wheaton, B., 2000, "Just Do It": Consumption, Commitment, and Identity in the Windsurfing Subculture, *Sociology of Sport Journal* 17, p. 254-274.
- Wheaton, B., & Beal, B., 2003, Keeping It Real, *International Review for the Sociology of Sport* 38:2, pp. 155-176
- Wheaton, B., 2004, *Understanding Lifestyle Sports: Consumption, identity and difference*, Routledge, New York (1st Edition).
- Wheaton, B., 2007, After Sport Culture: Rethinking Sport and Post-Subcultural Theory, *Journal of Sport and Social Issues* 31:3, pp. 283-307.
- YouGov Survey Results, 2005, Adventure Travel [online] Available from: https://d25d2506sfb94s.cloudfront.net/today_uk_import/YG-Archives-lif-starfish-adventuretravel-050216.pdf

Young, M. & Edis, T., 2006, *Why Intelligent Design Fails: A Scientific Critique of the New Creationism*, Rutgers University Press New Jersey.

Zuckerman, M., 1971, Dimensions of sensation seeking, *Journal of Consulting and Clinical Psychology* 26:1, pp. 45-52.

Zuckerman, M., 1979, Sensation Seeking, *Corsini Encyclopedia of Psychology*.

Bibliography

[The] Editors, 2014, Report: *Cliff Bar fires its riskiest sponsored climbers*, Outside Online 10/11/2014 [online], Available at: <http://www.outsideonline.com/1806076/report-clif-bar-fires-its-riskiest-sponsored-climbers>.

Adair, J., 2009, A phenomenology of touristic experiences. 1979. *Sociology (Oxford)* 13, pp.179--201.

Ahmed, S. M., & Palermo, A. S., 2010, Community Engagement in Research: frameworks for Education and Peer Review, *American Journal of Public Health* 100:8, pp. 1380-1387.

Alvesson, M., & Sandberg, J., 2011, Generating Research Questions Through Problematization, *Academy of Management Review* 36:2, pp. 247-271.

Anderson, A & Noble, K. 2001, *An analysis of regional variations in Sports Participation in Scotland*. Edinburgh: SportScotland (85).

Anderson, A., & Jack, S., 2002. The articulation of social capital in entrepreneurial networks: a glue or lubricant?, *Entrepreneurship & Regional Development: An International Journal* 14:3, pp. 193-210.

Anderson, A., & Noble, K, 2001, *Participation in Outdoor Sports Activity*, Research Digest 85. SportScotland.

Anderson, L., 2006, Analytic Autoethnography, *Journal of Contemporary Ethnography* 35:4, pp. 373-395.

Anderson, L., & Austin, M., 2011, Auto-ethnography in leisure studies, *Journal of Leisure Studies* 31:2, pp.131-146.

Apter, M. J., 1989, *Reversal theory: Motivation, emotion and personality*, Taylor & Frances/Routledge Florence, KY, viii, pp. 208.

Argenton, G., 2011, Time for Experience: Growing up under the experience economy, *Philosophy of Education Society of Australasia Conference 2011*

Arnason, J. et al., 2005, Networking: Social Capital and Identities in European Rural Development, *Sociologia Ruralis* 45:4

Art of Creative Thinking: How to be innovative and develop great ideas. Kogan Page.

Ball-King, L. et al., 2013, The rise and fall of a regulator: adventure sports in the United Kingdom, *Risk Analysis: An Official Publication of the Society for Risk Analysis* 33:1, pp. 15-23.

Beck, U., 1986, *RISIKOGESELLSCHAFT*, Suhrkamp.

Beedie, P., & Hudson, S., 2003, Emergence of mountain-based adventure tourism, *Annals of Tourism Research* 30:3, pp. 625-643.

Beedie, P., 2008, Adventure Tourism as a 'New Frontier' in Leisure, *World Leisure Journal* 50:3, p. 173-183.

Bennett, G. et al., 2002, Action Sports Sponsorship Recognition, *Sport Marketing Quarterly* 11:3, pp. 174-186.

Bertola, P., & Teixeira, J., 2003, Design as a knowledge agent: How design as a knowledge process is embedded into organisations to foster innovation, *Design Studies* 24:2, pp. 181-194.

Best, J., & Nicolson, E., 2006, *Population and Participation Figures: Key Equity Figures for 2006*, SportScotland Research Unit.

Birks, M., & Mills, J., 2011, *Grounded Theory: A practical guide*, Sage, Thousand Oaks.

Bone, M., & Johnson, K., 2009, *I miss my pencil: A design exploration*, IDEO Chronicle Books.

Bonevac, D., 2014, Heidegger's Map, *Academic Questions* 27:2, pp.165-184.

Bottomley, P., & Doyle, J., 2006, *The interactive effects of colours and products on perceptions of brand logo appropriateness*, Marketing Theory, Sage

Boyes, M., 2013, Outdoor adventure and successful aging, *Journal of Aging and Society* 33:4, pp. 644-665.

Brand Noise. 2013, *Culture Mapping research methodology* [online], Available at: http://brandnoise.typepad.com/brand_noise/2013/02/culture-mapping-research-methodology.html.

- Braun, V., & Clarke, V., 2006, Using thematic analysis in psychology, *Qualitative Research in Psychology* 3:2, pp. 77-101.
- Breivik, G., 2010, Trends in adventure sports in a post-modern society, *Sport in Society: Cultures, Commerce, Media, Politics* 13:2, pp. 260-273.
- British Cycling, 2013, *A Journey of Inspiration and Opportunity: Our Vision for women's cycling 2013 – 2020* [online], Available at: https://www.britishcycling.org.uk/zuvvi/media/bc_files/corporate/BC_VISION_FOR_WOMEN_CYCLING.pdf
- British Mountaineering Council, 2003, Participation Statistics [online], Available at: https://www.thebmc.co.uk/bmcNews/media/u_content/File/press/factsheets/ParticipationStats03.pdf.
- Brown, T., & Katz, B., 2009, *Change by design: How design thinking transforms organizations and inspires innovation*, Harper Business.
- Bruce, M., & Cooper, R., 2000, *Creative Product Design*, Wiley & Sons Ltd., Chichester.
- Brymer, E., 2010, Risk taking in Extreme Sports: A phenomenological perspective, *Annals of Leisure Research* 13:1, pp.218-238.
- Brymer, E., & Schweitzer, R., 2013, The search for freedom in extreme sports: A phenomenological exploration, *Psychology of Sport and Exercise* 14:6, pp.865-873.
- Buckley, R., 2003, Adventure Tourism and the Clothing, Fashion and Entertainment Industry, *Journal of Ecotourism* 2:2, pp. 126-134.
- Burnett, R., 2005, *How Images Think*, The MIT Press.
- Candy, L., 2011, *Practice Based Research: A guide*, Creativity and Cognition Studios.
- Celsi, R., L., et al., 1993, An exploration of high-risk leisure consumption through skydiving, *Journal of Consumer Research* 20:1, pp. 1-23.
- Charmaz, K., 2006, *Constructing Grounded Theory: a practical guide through qualitative analysis*, Sage, London.

- Christensen, C., 1997, *The Innovators Dilemma: When New Technologies Cause Great Firms to Fail*, Harvard Business Press, Massachusetts.
- Christensen, C., & Overdorf, M., 2000, Meeting the challenge of disruptive change. *Harvard Business Review* 78:2, pp. 66-77.
- Christensen, C., & Raynor, M., 2003, *The Innovator's Solution: Creating and Sustaining Successful Growth*, Harvard Business Press, Massachusetts.
- Christensen, C. et al., 2008, *Disrupting Class: How disruptive innovation will change the way the world learns*, McGraw-Hill.
- Clark, R., & Mayer, R., 2008, *E-Learning and the Science of Instruction: Proven guidelines for consumers and designers of multimedia learning*, Wiley & Sons Ltd., Chichester.
- Clarke, D., 2008, The Social Poetics of Place Making: Challenging the control/dichotomous perspective, *University of St. Andrews*.
- Coalter, F., & Dowers, S., 2006, *An analysis of regional variation sports participation in Scotland*, Research Report 105, SportScotland.
- Coalter, F., 1999, Sport and recreation in the United Kingdom: flow with the flow or buck the trends?, *Managing Leisure* 4:1, pp.24-39.
- Cockburn, C., & Ormrod, S., 1993, *Gender and Technology in the Making*, Sage, London.
- Cohen, E., 1979, A phenomenology of tourist experience, *Sociology* 13:2, pp. 179-201.
- Cohen, E., 1998, Authenticity and commoditization in tourism, *Annals of Tourism Research* 15:3, pp. 371-386.
- Cohen, E., 2004, *Biographical Dictionary of Social and Cultural Anthropology* Routledge.
- Cohen, et al., 2000, *Hermeneutic Phenomenological Research: A Practical Guide for Nurse Researchers*, Sage, Thousand Oaks.
- Corbin, J., & Strauss, A., 2008, *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*, Sage, Thousand Oaks.
- Cox, G. Sir., 2005, *Cox Review of Creativity in Business: building to the UK's strengths*, Pro INNO Europe.

- Creswell, J. W., 1998, *Qualitative Inquiry and Research Design: Choosing amongst five traditions*, Sage, Thousand Oaks CA.
- Creswell, J., 2013, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, Sage California, Fourth Edition.
- Cross, N., 2004, Expertise in design: An overview, *Design Studies* 25:5, pp. 427-441.
- Deakins, D. et al., 2004, Rural business use of information and communication technologies (ICT): a study of the relative impact of collective activity in rural Scotland. *Strategic Change* 13:3, pp. 139-150.
- Demirhan, G., 2005, Mountaineers' Risk Perception in Outdoor Adventure Sports: A study of sex and sports experience, *Perceptual and Motor Skills* 100:3c, pp. 1155-1160.
- Denzin, N., & Lincoln, Y., 2000, *Handbook of Qualitative Research*, Sage, Thousand Oaks CA.
- Dickson, T., & Dolnicar, S., 2004, No risk, no fun the role of perceived risk in adventure tourism, *CAUTHE 2004: Creating Tourism Knowledge* (Brisbane, Qld), Common Grounds Publishing (conference paper, pp. 184-189).
- Dimeo, P., 2005, Sport and adventure tourism. *Tourism Management* 26:1, pp. 113-114.
- Downard, P., & Riordan, J., 2007, Social Interaction and the Demand for Sport: An economic analysis, *Journal of Contemporary Economic Policy* 25:4, pp. 518-537.
- Draucker et al., 2007, Theoretical Sampling and Category Development in Grounded Theory, *Qualitative Health Research* October 17:8, pp. 1137-1148.
- Dwyer-Owens, D., 2000, The experience economy, *Franchising World* 32:1, pp. 11.
- Easto, P., & Warburton, C., 2010, *Adventure Tourism In Scotland*, The Tourism Innovation Group.

Eckert, C. J., 1990, Economic Development in Historical Perspective, 1945-1990, In *Korea old and new: A history*, ed. by C. J. Eckert, K. Lee, Y. Lew, M. Robinson, and E.W. Wagner, 388-418, Seoul, Korea, the Korea Institute, Harvard University.

Elias, N. and Dunning, E., 1970. The quest for excitement in unexciting societies. *The cross-cultural analysis of sport and games*, pp.31-51.

Ellis, C., 2004, *The ethnographic I: A methodological novel about autoethnography*, Rowman Altamira.

Ellis, C.S., & Bochner, A., 2000, *Autoethnography, personal narrative, reflexivity: Researcher as subject*.

Faullant, R., & Matzler, K., 2011, Personality, basic emotions, and satisfaction: primary emotions in the mountaineering experience, *Tourism Management* 32:6, pp.1423-1430.

Fawcett, J., & Downs, F. S., 1986, The Relationship of Theory and Research.

Feldman, U. et al., 1993, Quantifying the experience of color, *Proceedings SPIE 1913, Human Vision, Visual Processing, and Digital Display IV*, pp. 537.

Flood, A., 2010, Understanding phenomenology. *Nurse Researcher* 17:2, pp.7.

Florin, J. et al., 2003, A Social Capital Model of High-Growth Ventures, *Academy of Management Journal* 46:3, pp. 374-384.

Galloway, L., 2007, Can broadband access rescue the rural economy? *Journal of Small Business and Enterprise Development* 14:4, pp. 641-653.

Galloway, L., & Mochrie, R., 2005, The use of ICT in rural firms: a policy-orientated literature review. *Info* 7:3, pp. 33-46.

Galloway, L., & Mochrie, R., 2006, Entrepreneurial motivation, orientation and realization in rural economies: A study of rural Scotland, *The International Journal of Entrepreneurship and Innovation* 7:3, pp. 173-183.

Galloway, L. et al., 2002, Gender-based differences in entrepreneurial behaviour: A comparative study of Scotland and Finland, *The International Journal of Entrepreneurship and Innovation* 3:2, pp. 109-119.

Galloway, L. et al., 2004, ICT-enabled collectively as a positive rural business strategy, *International Journal of Entrepreneurial Behaviour & Research* 10:4, pp. 247-259.

- Galloway, L. et al., 2011, Rural small firms' use of the internet: From global to local, *Journal of Rural Studies* 27:3, pp. 254-262.
- Giyasettin, D., 2005, Mountaineers' Risk Perception in Outdoor-Adventure Sports: A study of sex and sports experience, *Perceptual and Motor Skills* 100:1c, pp. 1155-1160.
- Glaser, B., & Laudel, G., 2013, Life With and Without Coding: Two Methods for Early-Stage Data Analysis in Qualitative Research Aiming at Casual Explanations, *Forum: Qualitative Social Research* 14:2.
- Glaser, B., & Strauss, A., 1967, *The Discovery of Grounded Theory: Strategies for qualitative research*, Aldine, London.
- Green, K., et al., 2014, Isn't it good, Norwegian wood? Lifestyle and adventure sports participation among Norwegian youth, *Leisure Studies*, pp.1-18.
- Greenwood, C., & Yeoman, I., 2007, *What will activity and adventure tourism look like in 2015?*, VisitScotland.
- Grimaldi, V., 2003, *The Fundamentals of Branding*, Brandchannel [online] Available at: http://www.brandchannel.com/features_effect.asp?pf_id=183.
- Gubrium, J. F., & Holstein, J. A., 2009, *Analysing Narrative Reality*, Sage, London.
- Hall, C. J., 2015, Utilizing Grounded Theory to Enhance: the Education of Graduate Clinical Social Work Field Students, *The Grounded Theory Review* 14:2, pp. 86-92.
- Hamilton, M. et al., 2008, Fitting the Methodology with the Research: An exploration of narrative, self-study and auto-ethnography, *Studying Teacher Education: A journal of self-study of teacher education practices* 4:1, pp. 17-28.
- Hankinson, G., 2004, Relational network brands: Towards a conceptual model of place brands, *Journal of Vacation Marketing* 10:2, pp. 109-121.
- Hay, B., & Yeoman, I., 2005, Turning scenarios into a strategy map: Our ambition for Scottish tourism, *Journal of Vacation Marketing* 11:1, pp. 89-102.
- Hayes, D., 2013, 'Culture Mapping': *The future for social brands*, In the Company of Huskies [July].

- Heidegger, M., 1962, *Being and Time*, New York: HarperOne (Original version: 1927).
- Hendon, W. C., 1991, The wilderness as a source of recreation and renewal: who uses it? What are their characteristics? Their other interests? Their preferences? *The American Journal of Economics and Sociology* 50:1, pp.105-112.
- Hestad, M., 2005, The relationship between the brand and the product, *Oslo School of Architecture and Design*.
- Hestad, M., 2013, *Branding and product design: An integrated perspective*, Gower.
- Holland-Smith et al., 2013, British Surfers and Their Attitudes and Values Toward the Environment, *Ecopsychology* 5:2, pp. 103-109.
- Holland-Smith, D., & Olivier, S., 2013, "You don't understand us!" An inside perspective on adventure climbing, *Sport in Society: Culture, Commerce, Media, Politics* 16:9, pp. 1091-1104.
- Holt, D. B., 2002, Why Do Brands Cause Trouble? A Dialectical Theory of Consumer Culture and Branding, *Journal of Consumer Research* 29:1, pp. 70-90.
- Horvath, P., & Zuckerman, M., 1993, Sensation seeking, risk appraisal, and risky behaviour, *Personality and individual differences* 14:1, pp. 41-52.
- Hudson, B. T., 2011, Brand heritage and the renaissance of Cunard, *European Journal of Marketing* 45:9-10, pp.1538-1556.
- Hudson, S., 2003, *Sport and adventure tourism*, Haworth Hospitality Press.
- Husserl, E., 1970, *The idea of phenomenology*, The Hauge: Nojhoff.
- Interbrand, 2013, *Best Retail Brands*, Interbrand Report.
- Jansson, D., 2012, Branding Aland, branding Alanders: Reflections on place identity and globalization in a Nordic archipelago, *Place Branding and Public Diplomacy* 8:2, pp. 119-132.
- Jasper, M. A., 1994, Issues in phenomenology for researchers of nursing." *Journal of Advanced Nursing* 19:2, pp. 309-314.
- Jennings, G., 2001, *Tourism Research*. Milton: John Wiley & Sons Australia Limited.

- Johnson, M. et al., 2008, Reinventing Your Business Model, *Harvard Business Review* 86:12, pp. 57-68.
- Josserand, F. et al., 2003, Trans-national Nordic-Scottish co-operation: Lessons for policy and practice, *The Nordic Centre for Spatial Development*.
- Jourand, S. M., 1968, *Disclosing Man to Himself*, Van Nostrand, California.
- Jourand, S. M., 1971, *Self Disclosure: An Experimental Analysis of the Transparent Self*, Wiley-Interscience, Michigan.
- Keaveney, S., 1995, Customer Switching Behaviours in Service Industries; An exploratory Study, *Journal of Marketing* 59.
- Kelley, T., & Littman, J., 2001, *The Art of Innovation: Lessons in Creativity from IDEO, American's Leading Design Firm*, IDEO Crown Business.
- Kelley, T., & Littman, J., 2005, *The Ten Faces of Innovation: IDEO's Strategies for Defeating the Devil's Advocate and Driving Creativity Throughout Your Organization*, IDEO Currency/Doubleday.
- Kelley, T., and Kelley, D., 2013, *Creative Confidence: Unleashing the Creative Potential Within Us All*, IDEO Crown Business.
- Kennedy, L., 2012, *The A-Z of Branding*, Brand Republic.
- Kerr, J., & Mackenzie, S., 2012, Multiple motives for participating in adventure sports, *Psychology of Sport and Exercise* 13:5, pp.649-657.
- Kerr, J. H., 1997, *Motivation and Emotion in Sport: Reversal Theory*, Taylor & Francis Psychology Press Ltd.
- Kevin, L. K., & Lehman, D. R., 2006, Brands and Branding: Research Findings and Future Priorities, *Marketing Science* 25:6, pp. 740-759.
- Kim, J. K. et al., 2005, Detecting the change of customer behavior based on decision tree analysis, *Expert Systems* 22: 4, pp. 193–205.
- Kim, V. et. al., 2013, How does logo design affect consumers' brand attitudes?, *International Journal of Innovative Research in Management*.
- Kvale, S., 1996, *InterViews: An Introduction to Qualitative Research Interviewing*, Sage Publications, Thousand Oaks, CA.

- Laurendeau, J., & Sharara, N., 2008, Women Could Be Every Bit As Good As Guys: Reproductive and Resistant Agency in Two "Action" Sports, *Journal of Sport & Social Issues* 32:1, pp. 24-47.
- Laurendeau, J., 2008, 'Gendered risk regimes': A theoretical consideration of edgework and gender, *Sociology of Sport Journal* 25:3, pp. 293-309.
- Laverty, S. L., 2003, Hermeneutic phenomenology and phenomenology: A comparison of historical and methodological considerations, *International Journal of Qualitative Methods* 2:3, pp. 1-29.
- Lee, J. et al., 2005, Networking: Social Capital and Identities in European Rural Development, *Sociologia Ruralis* 45:4, pp. 269-283.
- Liechty, T., et al., 2011, 'I want to do everything!': leisure innovation among retirement-age women, *Journal of Leisure Studies* 31:4, pp. 389-408.
- Lindseth, A., & Norberg, A., 2004, A phenomenological hermeneutical method for researching lived experience, *Scandinavian Journal of Caring Sciences* 18:2, pp.145-153.
- Little, J., & Panelli, R., 2003, Gender research in rural geography. *Gender, Place & Culture: A Journal of Feminist Geography* 10:3, pp. 281-289.
- Llewellyn, D. J., & Sanchez, X., 2008, Individual differences and risk taking in rock climbing, *Psychology of Sport & Exercise* 9:4, pp. 413-426.
- Lockwood, T., 2009, *Design Thinking: Integrating Innovation, Customer Experience and Brand Value*, Allworth Press.
- Lorimer, R., & Holland-Smith, D., 2013, Why Coach? A Case Study of the Prominent Influences on a Top-Level UK Outdoor Adventure Coach. *The Sports Psychologist* 26, pp. 571-583.
- Lowe, P., & Talbot, H., 2000, Providing advice and information in support of rural micro businesses, *Centre for Rural Economy*.
- Loynes, C., 1998, Adventure in a Bun, *Journal of Experiential Education*.
- Malli, R., 2009, Tapping the rural opportunity: Paper#1 JWT, *Why the rural market is different* [online], Available at: <http://www.wpp.com/wpp/marketing/marketing/why-the-rural-market-is-different/>.

- Mao, P. et al., 2002, Adventure Sports and Tourism in the French Mountains: Dynamics of Change and Challenges for Sustainable Development, *Current Issues in Tourism* 5:1, pp. 22-32.
- Marshall, C., & Rossman, G. B., 2014, *Designing Qualitative Research*, Sage Publications.
- Marshall, M. N., 1996, Sampling for qualitative research, *Family Practice* 13:6, pp. 522-526.
- Martin, R., 2009, *The Design of Business: Why Design Thinking is the Next Competitive Advantage*, Harvard Business Review Press.
- Maslow, A. H., 1966 and 2002, *The Psychology of Science: A Reconnaissance*, Maurice Bassett Publishing.
- Maslow, A. H., 1954 and 1970, *Motivation and Personality*, Harper.
- Mason, J., 1996, *Qualitative Researching*, Sage, London.
- McCormack, J. et al., 2004, Speaking the Buick language: capturing, understanding and exploring brand identity with shape grammars, *Design Studies* 25:1, pp. 1-29.
- Mochrie, R. et al., 2006, Attitudes to growth and experience of growth among Scottish SMEs, *International Journal of Entrepreneurial Behaviour & Research* 12:1, pp. 7-20.
- Moggridge, B., 2007, *Designing Interactions*, IDEO The MIT Press.
- Moilaen, T., & Ranisto, S., 2009, *How to Brand Nations, Cities and Destinations: A planning book for place branding*, Palgrave Macmillan.
- Mootee, I., 2013, *Design Thinking for Strategic Innovation: What They Can't Teach You at Design or Business School*, IDEO Wiley.
- Mortati, M., 2011, Design and SMEs: the trigger of creative ecosystems, *The 5th International Conference on DPPI (Designing Pleasurable Products and Interfaces) Milan*.

- Mortati, M., 2014, Design for Social Innovation, *Building a framework of connection between Design and Social Innovation Conference Proceedings ServsDes 2014*, Lancaster, UK.
- Moustakas, C. E., 1971, *Individuality and encounter: a brief journey into loneliness and sensitivity groups*, H. A. Doyle Publication Co.
- Moustakas, C. E., 1990, *Phenomenological research methods*, Sage, Thousand Oaks.
- Moustakas, C. E., 1994, *Heuristic Research: Design, Methodology and Application*, Sage, California.
- Muncey, T., 2008, Doing autoethnography, *International Journal of Qualitative Methods* 4:1, pp.69-86.
- Munhall P. L., & Oiler Boyd, C., 1993, *Nursing Research: A Qualitative Perspective* (Second edition), Appleton Century Crofts, Norwalk.
- Murray, A., 2013, Physical Inactivity: Getting Scotland on the Move, *British Journal of Sports Medicine* 47:4, pp. 191-192.
- Mutter, F., & Pawlowski, T., 2014, The casual effect of professional sports on amateur sport participation: an instrumental variable approach, *International Journal of Sport Finance* 9:2, pp. 172-188.
- Newbery, P., & Farnham, K., 2013, *Experience Design: A Framework for Integrating Brand, Experience, and Value*, Wiley.
- Nielson, J., & Tahir, M., 2002, *Homepage Usability*, Pearson Education, Germany.
- Noack, E., 2011, Are Rural Women Mobility Deprived? – A Case Study from Scotland, *Sociologia Ruralis* 51:1, pp. 79-97.
- Obenour, W. L., 2004, Understanding the meaning of the 'journey' to budget travellers, *International Journal of Tourism Research* 6:1, pp. 1-15.
- Oliver, S., 2006, Moral dilemmas of participation in dangerous leisure activities, *Leisure Studies* 25:1, pp. 95-109.
- Olsen, M., 2001, *Women who risk: Profiles of women in extreme sport*, New York: Hatherleigh Press.
- Osborne, J. W., 1994, Some similarities and differences among phenomenological and other methods of psychological research, *Canadian Psychology* 35:2, pp. 167-189.

Osterwalder, A. et al., 2014, *Value Proposition Design: How to Create Products and Services Customers Want*, Wiley.

Pace, S., 2012, Writing the self into research using grounded theory analytic strategies in autoethnography, *Journal of writing and writing courses* 13, pp. 1-15.

Page, S. et al., 2005, Scoping the nature and extent of adventure tourism operations in Scotland: how safe are they? *Journal of Tourism Management* 26:3, pp. 391-397.

Page, S. et al., 2006, Analysing the Promotion of Adventure Tourism: A Case Study of Scotland, *Journal of Sport and Tourism* 11:1, pp. 51-76.

Page, S., 2003, The market for adventure tourism in Perthshire and evaluation of the Perthshire activity days product, Unpublished Report for Perthshire Tourism Board. University of Stirling.

Pain, M. T. G., & Pain, M. A., 2005, Essay: Risk talking in sport, *The Lancet* 366:1 pp. S33-S34.

Pernecky, T., & Jamal, T., 2010, (Hermeneutic) phenomenology in tourism studies. *Annals of Tourism Research* 37:4, pp.1055-1075.

Pernecky, T., 2010, The being of tourism, *The Journal of Tourism and Peace Research* 1 pp. 1-22.

Pine, B. J., & Gilmore, J. H., 1999, *The experience economy: Work is theatre & every business a stage*, Harvard Business Review Press, Boston.

Pomfret, G., 2006, Mountaineering adventure tourists: a conceptual framework for research, *Tourism Management* 27:1, pp.113-123.

Pomfret, G., 2011, Package mountaineer tourists holidaying in the French Alps: An evaluation of key influences encouraging their participation, *Tourism Management* 32:3, pp. 501–510.

Poulsson, S. H. G., & Kale, S. H., 2004, The Experience Economy and Commercial Experiences, *The Marketing Review* 4:3, pp. 267-277.

Premaratne, S. P., 2001, Networks, Resources and Small Business Growth: The Experience in Sri Lanka, *Journal of Small Business Management* 39:4, pp. 363-371.

Puchan, H., 2004, Living “extreme”: Adventure sports, media and commercialisation, *Journal of Communication Management* 9:2, pp.171-178.

- Qualman, E., 2012, *Socialnomics: How Social Media Transforms the Way We Live and Do Business*, John Wiley & Sons, New Jersey (2nd Edition).
- R. Kline, et al., 2002, Quantifying developer experiences via heuristic and psychometric evaluation, *Human Centric Computing Languages and Environments, Proceedings: IEEE 2002 Symposia*, pp. 34-36.
- Dilley, R. E., & Scraton, S. J., 2010, Women, climbing and serious leisure, *Leisure Studies* 29:2, pp. 125-141.
- Reissman, C. K., 2008, *Narrative Methods for the Human Sciences*, Sage, London.
- Richards, C., 2012, Auto-ethnography: how respondent researchers helped bring ethnography in from the cold, *International Journal of Market Research* 54:1, pp. 28-34.
- Richardson, B., 2013, *Tribal Marketing, Tribal Branding: An expert guide to the co-creation process*, Palgrave MacMillan.
- Ritchie, B. W., et al., 2005, *Tourism research methods: Integrating theory with practice*. Wallingford: CABI Publishing.
- Ritchie, J., & Lewis, J., 2003, *Qualitative Research Practice*, Sage, London.
- Rickly-Boyd, J. M., 2012, Lifestyle Climbing: Toward existential authenticity, *Journal of Sport and Tourism*, 17:2, pp. 85-104
- Salk, J., 1983, *Anatomy of Reality*, Praeger.
- Sbaraini, A. et al., 2011, How to do a grounded theory study: a worked example of a study of dental practices, *BMC Medical Research Methodology* 11:128.
- Sachs, J., 2013, *Winning the Story Wars: Why Those Who Tell – and Live – the Best Stories Will Rule the Future*, Harvard Business Press, Massachusetts.
- Saldana, J., 2009, *The Coding Manual for Qualitative Researchers*, Sage, London.
- Sanders, E., 2002, *Design and the Social Sciences: Making Connections*, Taylor & Francis London (Chapter 1).
- Sands, R. R., 1999, *Sport and Culture: At Play in the Fields of Anthropology*, Pearson Custom Publication.
- Sands, R. R., 2002, *Sport Ethnography*, Human Kinetics.

Saviolo, S., & Marazza, A., 2013, *Lifestyle brands: A guide to aspirational marketing*, 1st ed. Palgrave Macmillan.

Saxena, K., 2010, Treks n' Rapids: Identifying Motivational Factors for Adventure Sports, *American Journal of Economics and Business Administration* 2:2, pp. 172-178.

Seidman, I. E., 1991, *Interviewing as Qualitative Research*, Teachers' College Press, New York.

Schmidt, B., 2000, *The Modelling of Human Behaviour*, Erlangen: SCS Publications.

Schmitt, B. H., 1999, *Experiential Marketing*, New York: The Free Press.

Schuller, T. et al., 2000, *Social Capital: Critical Perspectives*. Oxford University Press, UK.

Schwartz, G. et al., 2013, Adventure sports and prejudice, *Motricidade* 9:1, pp. 57-68.

Scott-Elliott, R., 2013, *We still face negative views on women in sport*, The Independent [London(UK)]. 12/11/2013:68 [online] Available at: <http://search.proquest.com.libproxy.abertay.ac.uk/docview/1449850779?pq-origsite=summon>.

Scottish Household Survey, 2014, Scottish Government [online] Available at: <http://www.gov.scot/Publications/2015/08/3720>.

Scottish Mountain Rescue, *Annual Report 2006* [online] Available at: <http://www.scottishmountainrescue.org/wp-content/uploads/2014/10/MRCofS-Stats-2006.pdf>.

Scottish Mountain Rescue, *Annual Report 2007* [online] Available at: <http://www.scottishmountainrescue.org/wp-content/uploads/2014/10/MRCofS-Stats-2007.pdf>.

Scottish Mountain Rescue, *Annual Report 2008* [online] Available at: <http://www.scottishmountainrescue.org/wp-content/uploads/2014/10/Scottish-Mountain-accidents-2008.pdf>.

Scottish Mountain Rescue, *Annual Report 2009* [online] Available at: <http://www.scottishmountainrescue.org/wp-content/uploads/2014/10/MRCofS-final-report-2009.pdf>.

Scottish Mountain Rescue, *Annual Report 2010* [online] Available at: <http://www.scottishmountainrescue.org/wp-content/uploads/2014/10/Annual-report-2010.pdf>.

Scottish Mountain Rescue, *Annual Report 2011* [online] Available at: <http://www.scottishmountainrescue.org/wp-content/uploads/2012/07/Annual-Report-2011-v5Final.pdf>.

Scottish Mountain Rescue, *Annual Report 2012* [online] Available at: <http://www.scottishmountainrescue.org/wp-content/uploads/2014/04/Annual-Report-2012Finalv2-2.pdf>.

Scottish Mountain Rescue, *Annual Report 2013* [online] Available at: <http://www.scottishmountainrescue.org/wp-content/uploads/2015/03/Annual-Report-2013v32-.pdf>.

Scottish Mountain Rescue, *Annual Report 2014* [online] Available at: <http://www.scottishmountainrescue.org/wp-content/uploads/2016/02/Stats-2014-Final1.pdf>.

Scottish Mountain Rescue, *Annual Report 2015* [online] Available at: <http://www.scottishmountainrescue.org/wp-content/uploads/2016/12/Stats-2015-v2-Issued-16.pdf>

Seago, A. & Dunne, A., 1999, New Methodologies in Art and Design Research: The Object as Discourse, *Design Issues* 15:2, pp. 11-17.

Seale, C., 1999, *The Quality of Qualitative Research*, Blackwell, Oxford.

Sharp, B., 2007, *Scottish Mountaineering Incidences (1996-2005)*, Sportscotland, Research Report 109.

Sicard, M., 2013, *Brand Revolution Dictionary of Diplomacy: Rethinking Brand Identity*, Palgrave MacMillan

Silcoff, M., 2013, *Who Said Girls Can't Jump?* The New York Times (22/11/2013) [online] Available at: http://www.nytimes.com/2013/11/24/magazine/who-said-girls-cant-jump.html?nl=todaysheadlines&emc=edit_th_20131124&r=0.

Silverman, D., 2004, *Qualitative Research: theory, method and practice*, Sage, London.

Slanger, E., & Rudestam, K. E., 1997, Motivation and disinhibition in high risk sports: Sensation seeking and self-efficacy, *Journal of Research in Personality* 31:3, pp. 355-374.

Small, A., 1968, The Historical Geography of the Norse Viking Colonization of the Scottish Highlands, *Norsk Geografisk Tidsskrift (Norwegian Journal of Geography)* 22:1, pp. 1-16.

Smith, J. A., et al., 2009, *Interpretive Phenomenological Analysis: Theory, Method and Research*, Sage, London.

Smith, L., et al., 2008, Fitting the Methodology with the Research: An exploration of narrative, self-study and auto-ethnography, *Studying Teacher Education* 4:1, pp.17-28.

Sparkes, A., 2000, Autoethnography and narratives of self: Reflections on criteria in action, *Sociology of Sport Journal* 17:1, pp.21-43.

Sport England, 2015, Getting Active Outdoors: A study of Demography, Motivation, Participation and Provision in Outdoor Sport and Recreation in England

Statista, 2016, *Leading social networks worldwide as of April 2016, ranked by number of active users (in millions)* [online] Available at: <http://www.statista.com/statistics/272014/global-social-networks-ranked-by-number-of-users/>.

Steinbock, A. J., 1997, Back to the things themselves, *Human Studies* 20:2, pp. 127-135.

Stock, T. & Lena-Tupot, M., 2012, *A face in the crowd: culture mapping*, Research-live

Stock, T. & Tupot, M. R. 2012. *Semiotics: Recognise the Signs.*, Admap [November] pp. 42-43.

Stock, T. & Tupot, M. R., 2013, *Culture Mapping*, Admap [January] pp. 40-41.

Stoddart, M. C., 2011, Constructing masculinized sportscapes: Skiing, gender and nature in British Columbia, Canada. *International Review for the Sociology of Sport* 46:1, pp.108-124.

Strauss, A. & Corbin, J., 1990, *Basics of Qualitative Research*, Sage, Newbury Park.

Taher, S & Jamal, S., 2012, Determinants of mountaineers' decision to climb: An innovative marketing for mountaineering tourism, *2012 International Conference on Innovation, Management and Technology Research (ICIMTR2012)*, Malacca, Malaysia

http://ieeexplore.ieee.org/xpls/abs_all.jsp?arnumber=6236475&tag=1 , 21-22 May, 2012 IEEE, pp. 646-651.

Taylor, S., 2011 'Extending the Dream Machine': Understanding people's participation in mountain biking, *Annals of Leisure Research* 13:1-2, pp. 259-281.

Thomas, G., 2010, Doing case study: Abduction not induction, phronesis not theory, *Qualitative inquiry* 16:7, pp. 575-582.

Tourism Alliance, UK Tourism Statistics 2015, [online] Available at: http://www.tourismalliance.com/downloads/TA_369_395.pdf

Trend Watching 2014. November 2014 TREND BRIEFING - POST-DEMOGRAPHIC CONSUMERISM. [online]. Available from: http://trendwatching.com/trends/post-demographic-consumerism/?utm_medium=email&utm_campaign=RESEND%2520TB%2520Nov%252014%2520Post%2520Demographic%2520Consumerism%2520UK&utm_content=RESEND%2520TB%2520Nov%252014%2520Post%2520Demographic%2520Consumerism%2520UK+CID_884ea66f46e37d04e99c2b7fc3bc1b7e&utm_source=Campaign%2520Monitor&utm_term=Read%2520POST-DEMOGRAPHIC%2520CONSUMERISM%2520now.

Tucker, J., 2011, Social Signals, Personal Choices: Matching Messages with Motives, Centers for Disease Control and Prevention (CDC) National Conference on Health Communication, Marketing, and Media [online] Available at: <https://www.slideshare.net/4tuckertalk/social-signals-personal-choices-matching-messages-with-motives>

- Tupot, M. L., & Stock, T., 2004, *How to market brands in a people economy*, Admap 449 [April] pp. 32-34.
- Tupot, M. L., & Stock, T., 2005, *Can consumers own the brand?* Admap 462 [June] pp. 38-39.
- Tupot, M. L., & Stock, T., 2009, *Tried and tested approach to getting consumers talking*, Admap 501 [January] pp. 32-33.
- Uzzi, B., 1997, Social Structure and Competition in Infirm Networks: The Paradox of Embeddedness, *Administrative Science Quarterly* 42:1, pp. 35-67.
- Veal, A. J., 1992, *Research methods for leisure and tourism*. Essex: Longman Group UK Limited.
- Veloutsou, C., 2008, Branding: A constantly developing concept, *Journal of Brand Management* 15:5, pp. 299-300.
- Veryzer, R. W., & Borja de Mozota, B., 2005, The Impact of User-Orientated Design on New Product Development: An Examination of Fundamental Relationships, *The Journal of Product Innovation Management* 22:2, p. 128-143.
- Von Stamm, B., 2003, *Managing Innovation, Design and Creativity*, Wiley & Sons Ltd., Chichester.
- Vujadinovic, S. et al., 2013, Possibilities for mountain-based adventure tourism: the case of Serbia, *Bulletin of Geography. Socio-Economic Series* 19:19, pp. 99.
- Watkinson, M., 2013, *The Ten Principles Behind Great Customer Experiences*, Financial Times Series.
- Wenger, W., 2000, Communities of Practice and Social Learning Systems, *Organization* 7:2, pp. 225-246.
- West, A., & Allin, L., 2010, Chancing your arm: The meaning of risk in rock climbing, *Sport in Society: Cultures, Commerce, Media, Politics [Special Issue: The Consumption and Representation of Lifestyle Sports]* 13:7-8, pp. 1234-1248.
- West, P. et al., 2002, Worlds Apart: A comparison between physical activities among youth in Glasgow, Scotland and Dunedin, New Zealand, *Journal of Social Science and Medicine* 54:4, pp. 607-619.

- Wheaton, B., 2010, Introducing the consumption and representation of lifestyle sports, *Sport in Society* 13:7, pp.1057-1081.
- Wheaton, B., & Beal, B., 2003, "Keeping it real" Subculture Media and the Discourses of Authenticity in Alternative Sport, *Sociology of Sport* 38:2, pp. 155-176.
- Wheaton, B., 2000, "Just Do It": Consumption, Commitment, and Identity in the Windsurfing Subculture, *Sociology of Sport Journal* 17, p. 254-274.
- Wheaton, B., & Beal, B., 2003, Keeping It Real, *International Review for the Sociology of Sport* 38:2, pp. 155-176
- Wheaton, B., 2004, *Understanding Lifestyle Sports: Consumption, identity and difference*, Routledge, New York (1st Edition).
- Wheaton, B., 2007, After Sport Culture: Rethinking Sport and Post-Subcultural Theory, *Journal of Sport and Social Issues* 31:3, pp. 283-307.
- Wheeler, S., 2012, The significance of family culture for sports participation, *International Review for the Sociology of Sport* 47:2, pp. 235-252.
- White, M., & Kay, J., 2006, Who Rules Sport Now?: White and Brackenridge Revisited, *International Review for the Sociology of Sport* 41:3-4, pp.465-473.
- Wilde, K., 2007, *Women in Sport: Gender Stereotypes in the Past and Present*. [online] Available at: <http://wgst.athabascau.ca/awards/broberts/forms/Wilde.pdf>
- Wolff-Michael, R., 2009, Auto/Ethnography and the Question of Ethics. *Forum: Qualitative Social Research* 10:1.
- Woodman, T. et al., 2010, Motives for participation in prolonged engagement high-risk sports: An agentic emotion regulation perspective, *Psychology of Sport & Exercise* 11:5, pp. 345-352.
- Woratschek, H. et. al., 2007, Motivations of Sports tourists – An Empirical Analysis in Several European Rock Climbing Regions, *Bayreuth University*.
- YouGov Survey Results, 2005, Adventure Travel [online] Available from: https://d25d2506sfb94s.cloudfront.net/today_uk_import/YG-Archives-lif-starfish-adventuretravel-050216.pdf

YouGov Market Intelligence, 2013, Activity and adventure holidays [online]
Available from: <https://yougov.co.uk/news/2013/09/27/market-intelligence-activity-and-adventure-holiday/>

Young, M. & Edis, T., 2006, *Why Intelligent Design Fails: A Scientific Critique of the New Creationism*, Rutgers University Press New Jersey.

Zuckerman, M., 1971, Dimensions of sensation seeking, *Journal of Consulting and Clinical Psychology* 26:1, pp. 45-52.

Zuckerman, M., 1979, Sensation Seeking, *Corsini Encyclopedia of Psychology*.