Supply chain challenges of trekking to the summit of Kilimanjaro via the Machame route

Professor. M. J. Naude
School of Management, IT & Governance,
P Bag X01, Scottsville, Pietermaritzburg,
University of KwaZulu-Natal, South Africa.
Email: naudem@ukzn.ac.za (Corresponding author)

Evelyn Derera
School of Management, IT & Governance,
University of KwaZulu-Natal, South Africa.
Email: dererae@ukzn.ac.za

Abstract

This article explores the supply chain management challenges of trekking to the summit of Kilimanjaro in Tanzania, via the Machame route, with particular focus on the logistics. In the article key research gaps in the tourism trekking industry worthy of future theoretical and empirical exploration are identified. Stakeholders within the tourism trekking industry encounter many supply chain business-related challenges which have an impact on business profits on a daily basis across different operating systems. In the article current research on supply chain management challenges within the context of tourism are reviewed. Supply chain management in the tourism industry has attracted widespread research interest over the past two decades, whereas studies on supply chain management challenges in the tourism industry – specifically the trekking to the summit of Kilimanjaro– are limited. In this context, the study reported on in this article contributes to the existing body of knowledge by identifying areas through which trekking to the summit of Kilimanjaro can be improved.

Keywords: Kilimanjaro; trekking tourism; supply chain; logistics.
Introduction

Tourism is one of the largest and fastest growing sectors within the world economy (Africa Tourism Report, 2013). “In 2012, tourism registered one of the strongest and most consistent rates of growth, and for the first time, the number of international tourists exceeded one billion” (UNWTO, 2013). Similarly, the tourism industry is growing remarkably in developing nations (Magigi and Ramadhani, 2013). The number of tourists visiting sub-Saharan Africa has grown by more than 300% since 1990, with the year 2012 recording a record high of 33.8 million tourists visiting the region (Africa Tourism Report, 2013). Accordingly, the income generated from tourism has increased over the years. In Tanzania, for example, in 1997, the tourism industry contributed 15.8% to the national gross domestic product (GDP) and 54% of the country’s export earnings (National Tourism Policy, 1999). In 2001, the foreign exchange receipts increased to US $729.06 million (Odhambo, 2011). In 2004, the country’s total earnings from tourism activities increased to about US$746.2 million of which about US$71.3 million were estimated to have been earned in Zanzibar (Odhambo, 2011). In 2012, the income received from the tourism industry reached US$36 billion, contributing just over 2.8% to the region’s Gross Domestic Product (www.worldbank.org). Odhambo (2011) estimates that tourism is currently contributing about 25% of the country’s foreign exchange earnings.

Tourism is an increasingly important component of development strategy in Africa (Muganda, Sahli and Smith, 2010:629). Tanzania is one of the least developed countries that have abundant tourism assets (both natural and cultural) that are essential for economic growth (Muganda et al., 2010). Odhambo (2011) points out that tourism in Tanzania ranges from wildlife resources to spectacular landscapes, water bodies, beaches, a diversity of cultures and a number of archaeological sites. The main tourist destinations are Mt Kilimanjaro, the exotic island of Zanzibar, the Serengeti National Park, the Ngorongoro Crater, and the Selous Reserve (Odhambo, 2011). Tanzania is home to a variety of game and birds, including rhinos and flamingos (Odhambo, 2011). Tanzania offers tourism that is environmentally sustainable and economically viable (Nelson, 2012).

Tourism in Tanzania has grown rapidly since the economic doldrums of the late 1980s to become a pillar of macroeconomic growth and investment. The role of tourism in Tanzania’s economic revival over the past decade is vital to the development of the country (Nelson, 2012). Sustainable tourism is of utmost importance for poverty alleviation in the world’s poorest countries (Peaty, 2012). According to Muganda et al. (2010), economic development through tourism is achieved in three ways as described in the next paragraph.

In the first place, tourism is a source of foreign exchange and public revenue; in the second place, it is a labour-intensive activity that creates employment opportunities for people with varying skills, who in most cases would find it difficult to secure employment in the mainstream labour market in their area. In the third place, tourism generates opportunities for communities to participate in decision-making and ownership of tourism activities (Muganda et al., 2010). Tourism stimulates investment in new infrastructural development and competition (Brida and Risso, 2010) and contributes to the country’s GDP (Magigi and Ramadhani, 2013).

The development of tourism infrastructure is also seen in the form of resorts, rural inns and guesthouses, major outdoor recreational facilities (such as amusement parks), local museums, hiking routes and mountain bike trails (UNWTO, 2013). The tourism industry has the potential to contribute positively to the lives of people at grassroots levels by improving general living standards.

In spite of all the positive factors referred to above, a number of researchers have negative perceptions on whether the tourism industry benefits the host countries in a substantial way (Mitchell,
The emergence of tourism “does not guarantee that genuine development will take place, or that it will be equitable and sustainable” (UNWTO, 2013:10). For example, Peaty (2012:1) shows that the income generated from the tourism industry may not reach areas where poverty is greatest, especially in rural areas. This is evident when the benefits of tourism remain in the hands of a few large stakeholders which in most cases are based outside the tourism destination (UNWTO, 2013:11). “Tourism pessimists” remark that international tour operators and foreign owned hotels are the main beneficiaries from the tourism industry.

Some researchers (e.g. Slob and Wilde, 2006) have argued that employment in tourism is challenging. Mitchell (2012:458) agrees with this view and points out that it is “seasonal, low paying and exploitative”. For example, Kilimanjaro porters are not usually employed permanently. A number of climb operators have teams of porters that they use on all their trips, but most porters freelance (Bradtk, 2014).

In a report to the United Nations in 2010, Spenceley (2010:33) estimated that a tour guide received an annual income of US$1,830; porters received US$842 and cooks received US$771. These annual incomes included wages and tips. At present, even though there is a recommended minimum wage for Kilimanjaro porters it has been reported that a number of climb operators pay less than the recommended minimum wage. As a result, porters rely on climbers’ tips to feed their families, but they are not guaranteed tips from climbers.

Mitchell (2012:458) contends that “poor people are vulnerable to the cost of tourism development through loss of access to, and depletion of natural resources”. The tourism industry benefits the developed nations more than it does people from grassroots level in local communities. It is very important to understand how local communities participate and benefit from the tourism industry towards improving their livelihoods (Magigi and Ramadhani, 2013). Thus, “community-based economic development encompasses efforts that produce assets that, in turn, increase the capacity of local people to improve their quality of life” (UNWTO, 2013:35).

Despite the development of tourism around the world, there is a dearth of research on supply chain tourism in developing countries such as Tanzania, particularly in the field of trekking tourism (also known as mountain tourism). This is of particular importance since mountain regions occupy a key role in any economy (UNWTO, 2013). Lack of attention to supply chain networks is not unique to tourism research but is also visible in other service industries. Most service industries have focused on marketing rather than the supply side (Zhang, Song and Huang, 2009). Yet, good supply chain management is essential for gaining competitive advantage in a competitive global market.

This article adopts a different dimension by considering the supply chain management challenges, particularly the logistical challenges of trekking tourism within the African continent. Against this background, this article reports on a study that explored the supply chain management challenges of trekking to the summit of Kilimanjaro via the Machame route. The researchers used a literature review, one interview with a manager from one of the service providers from Mt Kilimanjaro trekking companies, and netnography. The experiences of one of the authors as a trekker to the summit of Kilimanjaro via the Machame route were also used. In the research on which this article is based, key research gaps in the tourism trekking industry were identified, thus providing a basis for further debate on topics in the research area.

This article consists of four parts. Part one deals with the research method used. Part two, which provides an overview of the study area (trekking Kilimanjaro via the Machame route), is followed by part three, the explanation of tourism supply chain management and the trekking tourism in the Kilimanjaro region. Part four, an outline of the supply chain and logistical challenges of trekking to the summit of Kilimanjaro, is followed by the conclusion.
Research methods

This study was exploratory and a mixed research methods approach was adopted to investigate the supply chain challenges of trekking to the summit of Kilimanjaro via the Machame route. The research consisted of a literature review, one interview with a manager from one of the service providers from Mt Kilimanjaro trekking companies, and netnography. It also drew on the experiences of one of the authors as a trekker to the summit of Kilimanjaro via the Machame route. This particular author was part of a group of five adults (two females and three males). Before the discussion is continued below, it is necessary to explain the meaning of the term “netnography” in detail in the context of consumer research.

Netnography, first conceptualised by Robert Kozinets within consumer research (Kozinets, 1997, 1998, 1999, 2002, 2006), is a novel adaptation of traditional ethnography for the Internet as a virtual fieldwork site (Wu and Pearce, 2014). Since being introduced by Kozinets, the use of netnography has been adopted in other fields of study as tourism, although, netnography is still in its infancy (Mkono, 2011). Netnographic research involves searching for and analysing relevant computer-generated data to address identified research questions (Mkono, 2012a; 2012b). For example, a researcher interested in travel motivations of tourists visiting a particular destination could study customer reviews on tourism-related websites such as Tripadvisor.com, Virtualtourist.com and other general networking sites such as Facebook and Twitter (Haldrup and Larsen, 2009; Mkono, 2011). In this study, two websites relating to tourists trekking Mt Kilimanjaro were used to explore the logistical challenges of trekking to Kilimanjaro via the Machame route. The reviews analysed were accessed on 2 March 2015 from www.ultimatekilimanjaro.com and www.climbingkilimanjaro.com. When using netnography, researchers use their discretion to include or exclude portions of generated data; the data collected may be quantitative and/or qualitative (Mkono, 2012a).

Netnography can be used to explore newly emerging phenomena, where relatively little is known about the market and the tourists’ experiences, in particular phenomena related to the supply chain management aspect of the tourism industry (Wu and Pearce, 2014). The merits of using netnography are as follows: it is more expeditious than traditional qualitative methods such as interviews and focus groups; it is less cumbersome as no transcription of data is required; it is relatively cost-effective because travel costs are eliminated, with online access becoming increasingly cheaper; and it is more likely to generate honest, candid accounts as participants join the blogosphere of their own free will, and participants may assume pseudonymous or anonymous identities (Beaven and Laws, 2007; Dwivedi, 2009; Kozinets, 1997, 1998, 2002, 2006; Mkono, 2012a). Netnography sometimes provides researchers with access to groups of people who may otherwise be difficult to reach (Wu and Pearce, 2014). The use of netnography expedites the research process because the need for the consent of participants is eliminated and draws upon respondents from a wider global space (Mkono, 2012a). For this study, more than 100 online tourist reviews posted from 30 July, 2010 for www.ultimatekilimanjaro.com and September 2009 for www.climbingkilimanjaro.com were analysed.

The following challenges of netnography have been highlighted by Mkono (2012a): the researcher cannot verify the authenticity of participants’ claims (e.g. those regarding their age and place of residence); the researchers have no access to nonverbal communication, and have to rely entirely on written text, a condition that may limit the richness of data; some website content might be manipulated for various ends, as in the case, for example, where corporate owned sites are administered in a manner that portrays a desired business image, so that
negative customer reviews, for instance, are deleted by website administrators. Lastly, the researchers, as nonparticipant observers, cannot direct the content of participants’ text. However, this is also an advantage in that researcher-observer-effect is minimised, reducing biased responses from participants.

Content analysis was used to analyse the data.

The Kilimanjaro region trekking tourism

Mt Kilimanjaro is the highest mountain in Africa (5895metres), and it is regarded as the highest free-standing mountain in the world (Davies et al., 2009; Mckenzie, Mark, Thompson, Schotterer and Lin, 2010). Mt Kilimanjaro is a popular tourist destination for trekkers around the world. A network of tour operators, porters and guides makes the climb one of the most organised trips in Africa (Spenceley, 2010).

It is estimated that the average climber contributes US$1376 to the Tanzanian economy (Peaty, 2012:3). The largest single items of tourist expenditure are the National Park fees (47%), wages and tips for climbing staff (18%), tour operator profit margins (16%), accommodation (6%), food and beverages (6%), cultural goods and services (4%), and transport (3%) (Mitchell, Keane and Laidlaw, 2009:4).

Based on approximately 35 000 tourists spending an average of a week each on the mountain, the trekking tourism provides jobs for approximately 400 guides, 500 cooks and 10 000 porters (Peaty, 2012:3; Mitchell et al. 2009:5). It is estimated that guides undertake approximately 17 trips a year, while porters and cooks undertake approximately 14 trips (Spenceley, 2010). The majority of these people are from the local farming communities that are poor and are considered to be at the bottom of the pyramid. A distinctive feature of the trekking tourism industry is that it is labour intensive, and without ‘the input from the guides, cooks and porters’, the growth of the trekking industry would be negatively affected (Peaty, 2012:3; Spenceley, 2010; Mitchell et al., 2009:5). In other words, they are vital for the growing number of tourists attempting to climb Kilimanjaro. Picture 1 shows porters trekking Mt Kilimanjaro.

![Picture 1: Porters trekking Mt Kilimanjaro. (Source: Authors’ photograph, 2014)](image)
Every year, approximately more than 35,000 people attempt to reach the summit of Mt Kilimanjaro, the highest mountain in Africa, also referred to as the roof of Africa (Mitchell et al., 2009:4). Approximately 98% of the climbers are non-resident (Spenceley, 2010). Climbers can choose from six different routes to ascend the mountain: the Marangu; Mweka; Umbwe; Machame; Lemosho and Shira routes. Figure 1 shows the different routes to the peak of Mt Kilimanjaro.

The Machame route, also known as the "Whiskey" route is the most popular route to the top of the mountain (TANAPA, 2014). This route is described as the most scenic and varied. However, the trek is longer and steeper and is considered to be difficult. The Machame route takes six days to reach the summit at Uhuru peak. Climbers sleep in tents supplied by service providers at designated campsites and eat meals inside a dining tent. Porters carry all gear, set up tents and prepare meals.

For most climbers, it would not be possible to reach the summit of Kilimanjaro without the assistance of porters and guides. For each climb, porters spend six days on the mountain, usually climbing in worn out clothes and shoes with 25 kg on their heads and backs. After climbers have set off in the morning, porters pack the tents and all the other equipment; then they race past the climbers to set everything up again at the next camp. Porters are required to cook, serve dinner, do the dishes, and carry all the water from the nearest stream (Bissel, 2007:4).

Climb overview of the Machame route

The Machame route takes seven days to complete. The breakdown of the route is outlined in Table 1.
Table 1: Breakdown of the Machame route

<table>
<thead>
<tr>
<th>Day</th>
<th>Start</th>
<th>Start Altitude (m)</th>
<th>Finish</th>
<th>Finish Altitude (m)</th>
<th>Time (hrs)</th>
<th>Distance (km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Machame Gate</td>
<td>1 828</td>
<td>Machame Camp</td>
<td>3 020</td>
<td>5-7</td>
<td>10.8</td>
</tr>
<tr>
<td>2</td>
<td>Machame Camp</td>
<td>3020</td>
<td>Shira 2 Camp</td>
<td>3 847</td>
<td>4-6</td>
<td>5.2</td>
</tr>
<tr>
<td>3</td>
<td>Shira 2 Camp</td>
<td>3 847</td>
<td>Lava Tower</td>
<td>4 643</td>
<td>4-5</td>
<td>7.0</td>
</tr>
<tr>
<td></td>
<td>Lava Tower</td>
<td>4 643</td>
<td>Barranco Camp</td>
<td>3 984</td>
<td>2-3</td>
<td>3.7</td>
</tr>
<tr>
<td>4</td>
<td>Barranco Camp</td>
<td>3 984</td>
<td>Karanga Camp</td>
<td>4 040</td>
<td>4-5</td>
<td>5.8</td>
</tr>
<tr>
<td>5</td>
<td>Karanga Camp</td>
<td>4 040</td>
<td>Barafu Camp</td>
<td>4 680</td>
<td>4-5</td>
<td>3.4</td>
</tr>
<tr>
<td>6</td>
<td>Barafu Camp</td>
<td>4 680</td>
<td>Uhuru Peak</td>
<td>5 895</td>
<td>7-8</td>
<td>4.5</td>
</tr>
<tr>
<td></td>
<td>Uhuru Peak</td>
<td>5 895</td>
<td>Mweka Camp</td>
<td>3 068</td>
<td>4-6</td>
<td>10.8</td>
</tr>
<tr>
<td>7</td>
<td>Mweka Camp</td>
<td>3 068</td>
<td>Mweka Gate</td>
<td>1 640</td>
<td>3-4</td>
<td>8.5</td>
</tr>
</tbody>
</table>

Total distance (km) 59.7

(Source: Adapted from www.kilimanjaro.com)

As can be seen from Table 1, the duration of the climb is seven days. The activities for each day are briefly explained in Table 2.

Table 2: Brief explanation of the daily activities for the Machame route

<table>
<thead>
<tr>
<th>Day</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>Arrive at Machame Gate and register. The trek from Machame Gate (1828m) to Machame Camp (3 020m) is 10.8km.</td>
</tr>
<tr>
<td>Day 2</td>
<td>The trek from Machame Camp (3020m) to Shira Camp (3 847m) on the southern edge of Shira Plateau is 5.2km.</td>
</tr>
<tr>
<td>Day 3</td>
<td>Trek from Shira Camp (3 847m) to Lava Tower (4642m). Lunch is provided at the foot of the Lava Tower. After lunch, descend from Lava Tower to Barranco Camp (3 984m). Distance from Shira Camp to Lava Tower is 7.0km and from Lava Tower to Barranco Camp is 3.7km.</td>
</tr>
<tr>
<td>Day 4</td>
<td>Trek from Barranco Camp (3 984m) to Karanga Camp (4040m) via the 257m high Breach Wall across the valley from Barranco. Distance is 5.8km</td>
</tr>
<tr>
<td>Day 5</td>
<td>The trek from Karanga Camp (4040m) to Barafu Camp (4680m) is 3.4km. At approximately 23:00 leave camp for the summit attempt via Stella Point (5 752m) to the summit. Distance from Barafu to Stella Point is 3.3km. The distance from Stella Point to summit is 1.2km.</td>
</tr>
<tr>
<td>Day 6</td>
<td>On the summit the guide will decide on how much time to spend there. The decision is based on the trekkers’ condition, timing and weather. From the summit descend to Stella Point and then to Barafu Camp. Refreshments will be provided at Barafu and trekkers will be able to rest for one hour before descending to Mweka Camp (3 090m). Distance from summit to Barafu Camp is 4.5km and from Barafu to Mweka Camp 6.3km.</td>
</tr>
<tr>
<td>Day 7</td>
<td>The descent from Mweka Camp to Mweka Gate (1641m) is 8.5km.</td>
</tr>
</tbody>
</table>

(Source: www.climbingkilimanjaro.com)

**Literature review**

**Tourism supply chain management**

Supply chain management has been extensively used in the manufacturing of products to improve efficiency across the value chain, including the efficiency of logistics, planning activities, and material and information control internally (within companies) and externally (between companies) (Zhang et al., 2009:346). Supply chain management in any sector covers all aspects of the product's life cycle (Tapper and Font, 2004), namely raw materials, processing, manufacture, distribution, retailing, customer use and...
the final disposal of the product (Tapper and Font, 2004).

Wisner, Tan and Leon (2012:8) observe that supply chain management includes coordinating or integrating a series of businesses that ultimately make products and services available to consumers, including functions that promote the production, delivery and recycling of materials, components, end products and services. Similarly, Sanders (2012:3) defines supply chain management as the design and management of flows of products, information and funds throughout the supply chain. It involves the co-ordination and management of all activities of the supply chain network (Sanders, 2012:3). These key activities are strategic management, inter-organisational issues, vertical integration, the supplier relationship, and purchasing and supply (Zhang et al., 2009:347).

Johnson, Leenders and Flynn (2011:6) describe supply chain management in terms of a systems approach to managing the entire flow of information, the flow of funds, the flow of materials and services, and the flow of relationships, from raw materials suppliers to manufacturing plants and warehouses to the consumer.

Although supply chain management has been used extensively in the manufacturing industry, less attention has been devoted to the service sector (Zhang et al., 2009:346), especially tourism supply chain management. Lin, Zhou, Shi, and Ma(2009:1192) define service supply chain management as “the management of information, processes, and resources along the service supply to delivery services to the customer”. For example, hotels, airlines, cruise ships and tour operators rely on supply of goods and services in order to provide their own guests, passengers and clients with the service they require (Green Hotelier, 2006).

Although the concept of tourism supply chain (TSC) is under-researched, a number of authors have alluded to the concept or its equivalents, such as tourism value or tourism industry chains. Kaukal, Höpken, and Werthner (2000) note that a typical tourism value chain consists of four components: the tourism supplier, tour operator, travel agent and customer, which reside in a single linked chain. Tapper and Font (2004) point out that the TSC comprises the suppliers of all the goods and services that go into the delivery of tourism products to consumers. Tourism activities focus on the main points such as accommodation, transport, ground handlers (including excursions and activities) and food and crafts (Tapper and Font, 2004). TSCs involve millions of individuals and businesses acting as links in a chain to provide their customers with what they need (Green Hotelier, 2006).

Tourism products are normally based in a specific territory and provided to tourists from a specific source market; as a result they often vary according to destination and source markets. Based on the existing definitions of TSC in the literature and taking into consideration the characteristics of the tourism industry, the following definition of a TSC was formulated by Zhang et al. (2009:346):

A TSC is defined as “a network of tourism organisations engaged in different activities ranging from the supply of different components of tourism products/services such as flights and accommodation to the distribution and marketing of the final tourism product at a specific tourism destination, and involves a wide range of participants in both the private and public sectors”(Zhang et al., 2009:346).

Tourism, as other supply chains, operates through business-to-business relationships (Tapper and Font, 2004) and maintenance of such relationships is essential. The main differences between TSC and other supply chains are that tourists travel to the product, and the product that they purchase has a high service component; for example, it involves a higher proportion of people in the immediate production of the holiday experience).

Researchers such as Yilmaz and Bititci (2006) developed a tourism value chain model to assist in managing tourism products as end-to-end seamless entities.
Tapper and Font (2004:4) argue that “[t]he sustainability of a tourism product depends on various issues which includes the environment and working conditions in the destination countries, the safety of customers and staff delivering all aspects of the tourism product, the resource use and disposal (including proper handling, reuse and recycling of waste materials, and the measures to increase efficient use of resources”. The key elements of the TSC are presented in Figure 2.

![Figure 2: Key elements of the tourism supply chain. Source: Tapper & Font, 2004](image)

The components shown in Figure 2 comprise part of the holiday product that is expected by tourists when they purchase a holiday. Any anomalies within the value chain system could result in problems that challenge the delivery of a holiday. A number of these challenges are combined with tourism logistical challenges and are explained elsewhere (see the section under the heading “Tourism supply chain management and logistical challenges”).

**Tourism logistics**

Logistics is that part of a supply chain process that “plans, implements and controls the effective and efficient forward and reverse flow and storage of goods and services and related information between point of origin and point of consumption in order to meet customers’ requirements” (Farahani, Resapour and Kardar, 2011). The mission of logistics is the positioning of resources at the right time, at the right place, at the right cost, in the right quantity, and in the requested condition which ultimately results in increased profit (Farahani et al., 2011). From a tourist’s perspective, the question whether the mission has been realised depends on the tour operator’s general performance. Thus, the mission of the tour operators is to ensure that all assets and services are positioned at the right place, at the right time, at the right cost, and in the requested condition with the ultimate aim of realising increased profit.

**Tourism supply chain management and logistical challenges**

The success of the tour operator depends on how the operator handles all the key components within the supply chain management and logistical aspects of a product (for example a holiday package). In order to deliver a five-star service, the service should be built into all the networks of the system. A decrease in the service standards along the value chain system affects the overall impact of the
end production the client. The following extracts from the descriptions of the experiences of two customers summarise the complexity of managing a touring company:

“I cannot imagine the logistics of running a company located in the US for a business involving customer service and based in a developing country. There were so many moving parts that ran smoothly. I believe much of that is due to the spirit of the Tanzanians to make clients happy” (www.ultimatekilimanjaro.com).

“There were a few issues with coordination at the beginning when I arrived, but nothing major” (www.ultimatekilimanjaro.com).

Once a breakdown in service occurs, the customer loses trust in the quality of service. A physical product can always be replaced, but in the case of services it is difficult to reverse a customer’s perception based on a specific experience. As a result, service providers work very hard to deliver memorable experiences to their customers. Below is an extract from one of the service providers regarding offering good service to customers:

“We also make sure we give our clients good service, for example, answer emails on time… In addition, we make sure vehicle and drivers are at the airport waiting for the clients and taking them to the correct hotel. We also make sure the hotel is in order before the clients arrive. Again getting proper vehicles and then to make sure they are properly maintained and serviced correctly is important… On the last day of the hike, the lead guide must make sure the operational office is informed what time the group will reach the gate. The operational office must make sure transport is arranged, the hotel is in order for the clients. All tents, gear, etc. must be returned to the store room, where it must be cleaned, and before packing away checked for damage etc.” (www.ultimatekilimanjaro.com).

When good service is offered to customers, they are contented and service providers benefit from the resulting positive word of mouth advertising (Du Plessis, 2014). A number of positive comments from happy customers follow below:

“Kilimanjaro’s people treated me like a queen” (Du Plessis, 2014)

“The guides are knowledgeable and friendly and are genuinely concerned for the guests’ overall experience from transportation logistics to setting foot on the roof of Africa!” (www.ultimatekilimanjaro.com).

“We had an amazing time. Our guide was excellent. He seemed to have a sixth sense for when people were struggling or feeling unwell, and concentrated 100% on helping and making things more comfortable for us. I was sick one day (stomach cramps) and the difference a caring guide made was astounding” (www.ultimatekilimanjaro.com).

“Joseph’s (a guide) vast experience of more than 150 times up the mountain paid off for us many times. He also has an extensive knowledge of the plant life at each zone of the mountain and his identification (in both Latin and English!) of the varied bushes; trees and plants on Kilimanjaro enhanced our experience immensely” (www.ultimatekilimanjaro.com).

“Our guide, Theo, was an excellent resource – he had been to the summit over 300 times in his 10 years as a guide, and he treated us well” (www.ultimatekilimanjaro.com).

The above extracts from reports from customers indicate the need for employing
knowledgeable and caring guides. Thus, even if the service provider ensures that the logistics are running smoothly, the customer’s overall trip could be ruined by the negativity of guides, porters, among others.

There are numerous macro and micro factors that affect the success of expeditions to reach the summit. Some of these challenges are dealt with below.

**Macro challenges**

Changing weather patterns, health- and safety-related challenges and political changes are some of the macro challenges that affect the success of expeditions in their attempts to reach the summit of Mt Kilimanjaro.

**Changing weather patterns**

Tourism activities are often seasonal and characterised by unpredictable weather conditions (UNWTO, 2013). Adverse weather conditions negatively affect the profitability of the trekking business since harsh weather conditions have a negative influence on the logistics of trekking to the summit of Mt Kilimanjaro. It is therefore imperative that tour guides possess a degree of understanding of the dynamics of weather conditions so that they know when to market and deliver the service to the customers. For example, during December in the region where Mt Kilimanjaro is located there are usually heavy rains and strong winds which make it difficult for trekkers to climb the mountain. Heavy rains affect the safety of the trekkers and hamper the success of the expedition, because there is not always accessible shelter to hide from the rain and often the climbing equipment gets wet. For example, on 17 September 2002 three porters died after Kilimanjaro experienced heavy rain and strong winds. These porters did not have appropriate clothing (Keats, 2002). Such situations are likely to traumatisate trekkers, who may need the services of trauma counsellors. Moreover, the viability of such services may be compromised. The following extracts provide an indication of how unpredictable weather conditions can negatively affect the logistics of trekking to the summit of Mt Kilimanjaro:

“It was cold and raining 6 out of the 8 days, some of them to extremes (tent blowing over and hail), but again the staff always reacted quickly and efficiently and I never felt unsafe”(www.ultimatekilimanjaro.com).

“Coming down from Uhuru… was a real challenge and I am not sure I would get to do anything like it again in my life. For nearly two hours I came down sliding on mud, which is how the terrain was…”(www.ultimatekilimanjaro.com).

“I have been backpacking many times in the Rocky Mountains in the States and it’s quite rare to have a tent that endures the rain, snow, and other elements of high altitude climbs”(www.ultimatekilimanjaro.com).

**Health- and safety-related challenges**

Health issues and safety (Peaty, 2012) are also cause for concern for the tour guides. According to Peaty (2012), between 15 and 20 porters die on Mt Kilimanjaro each year due to health and safety related issues. The safety issues include among other things, a lack of experience, unsuitable clothing and equipment, inadequate or no shelter and being overloaded. Peaty (2012) argues that the underpaid Kilimanjaro porters are more vulnerable than the climbers in terms of pneumonia, hypothermia, frostbite, stomach ailments and other health-related issues. The porters carry on climbing even when they do not feel well, as abandoning a climb may make it impossible for them to get future employment. Reid (2008) notes that trekkers like the porters are also in danger of health- and safety-related issues. For instance, there is the danger of getting altitude sickness as trekkers are not used to the altitude. It is for this reason that it is recommended trekkers take appropriate medication which helps to
prevent altitude sickness. Should the lead guide be of the opinion that on summit night a trekker's oxygen level is too low, he will recommend that the trekker abandon the trip. If a trekker gets altitude sickness or becomes really ill, a porter will take him down. The quotes below give a picture of the health-related challenges to which climbers are exposed:

“The night of the peak was very hard for me. I was feeling weak, had trouble breathing and had nausea... I was way behind the rest of my group...” (www.ultimatekilimanjaro.com).

“The assistant guides were also great – when my dad got sick and had to be evacuated, I knew he was in good hands getting down”(www.ultimatekilimanjaro.com).

“Four of our 12 climbers were hospitalised for a variety of issues (headaches, diarrhoea, trouble breathing, exhaustion, nausea, etc.) but the guides handled each issue as an emergency and helped the participants immediately. The porters' work ethic was simply amazing ...” (www.ultimatekilimanjaro.com).

In view of the challenges discussed here, trekking companies on Mt Kilimanjaro conduct basic physiological measurements such as arterial oxygen saturation to educate their customers. This is how one of the service providers describes the health of their customers:

“From the operational office point of view – once the hike starts, then things are a bit easier, however the guide must radio or call the operational office every day to advise oxygen level readings of clients, advise if problems”(www.ultimatekilimanjaro.com).

The quote below from a customer emphasises that it is vital for service providers to make sure that the overall health of their customers is not compromised:

“...and watched out for us at all times, they provided medical assessments at the start and close of each day at our daily briefings” (www.ultimatekilimanjaro.com).

In addition, trekkers are provided with a list of various medicines they should take with them such as medication for diarrhoea, nausea, headaches, flu and colds, and antibiotics in case of infection.

**Political changes**

Tourism activities are often unpredictable due to changes in political and other external factors (UNWTO, 2013). An example of political challenges includes visa requirement changes.

Another challenge that negatively affects business operations is corruption, especially in developing countries. Corruption increases operational costs as tour operators pay extra for other administration-related issues such as renewal of registration licences and customs duty. The extract below is from a service provider who felt the negative impact of corruption on business operations:

“Managing a company in corrupt Africa is difficult. There are annual registrations, licences etc. Bringing in tents for example and not being ripped off by customs is a huge problem”(www.ultimatekilimanjaro.com).

**Micro challenges**

**Waste recycling and garbage collection**

According to Peaty (2012), garbage discarded by both trekkers and support teams is often to be seen on Mt Kilimanjaro. It is the responsibility of both the trekkers and the support teams to ensure an environment that is free from litter, but not everyone acts accordingly. Although it is one of the duties of the porters to collect the waste from the trekkers at least twice a day (in the morning and evening), it is a challenge to
carry it—especially the decomposing garbage—all the way back to Machame Gate. As a result, trails of litter are often seen in the mountain.

**Service providers**

There are numerous different operators marketing trips to the summit of Mt. Kilimanjaro. A number of these operators charge low prices for the holiday package, thereby compromising quality. Below is an extract from one of the service providers regarding competition that exists among operators:

“There are many different operators offering the Kilimanjaro package, and some of them are offering the package (Kilimanjaro) for next to nothing. These operators under pay staff; they do not give adequate hotel accommodation to their clients; they do not maintain the gear, etc. … to name a few points where they cut down. Unfortunately many hikers don’t care how staff are treated, what service or safety procedures are followed … they are just looking at prices and book with the cheapest company they can get”(www.ultimatekilimanjaro.com).

In addition, some of the tour operators are not reputable as they are involved in scams. The extract below reveals the experiences of two customers:

“I had originally booked with a different company (located in Tanzania). But once I wired my $200 deposit, their communication with me became very brief or non-existent” (www.ultimatekilimanjaro.com).

“Our guide was extremely helpful on the first day of our hike, with helping us first deal with a scam we’d fell victim to (before we’d booked with you). We spent the morning running around Moshi dealing with the bank and the police, and the guide was very helpful and patient in this. He also expertly arranged for our park permit to be obtained very efficiently without wasting additional time” (www.climbingkilimanjaro.com).

Choosing the “right” service for climbing Mt Kilimanjaro is vital to experiencing a memorable challenge of a lifetime. Although the service providers work hard to deliver good service, they often encounter challenges, a number of which are caused by members who function in the value chain system. Here is what one of the service providers had to say:

“Another challenge is finding reputable hotels. Some hotels make over-bookings and then your clients are moved to another hotel last minute …”(www.ultimatekilimanjaro.com).

According to Davies et al. (2009), many professional trekking companies market Mt Kilimanjaro as a “challenge of a lifetime”, thereby attracting relatively inexperienced trekkers, of whom the majority ascend to raise money for charity purposes. As a result, trekking to the summit with inexperienced climbers poses logistical challenges.

**Quality of service provided by support staff**

It is essential that excellent service be provided on the mountain and this responsibility lies with the support staff. It is necessary for the service provider to have an adequate number of support staff, such as porters and cooks, for trekking. If there is not a proper balance between the climbers and support staff, service quality is compromised. However, recruiting good staff and retaining them is a major challenge. There are always new companies looking for good guides, porters, and other support staff. These companies often try to attract the accompanying staff with promises of higher salaries.

Service providers should have a team of dedicated staff and this staff should be adequate in number and sufficiently skilled to support the tourists. Having too few and unskilled staff results in poor service and overworking of the team. Picture 2 shows
a team of support staff (guides, porters and cooks) who accompanied five tourists to the summit of Kilimanjaro. Here the ratio is 1:4.

Below are comments from customers on the service provided by the porters, guides, and cooks.

“He looked after us like we were his sisters, made sure we were comfortable and couldn’t do enough for us. He is an absolute gem and such an asset to your company” (www.ultimatekilimanjaro.com).

“August and Elias – These two gentlemen looked after us and went more than the extra mile to make sure that we were safe, healthy, having fun and that we would eventually make the summit. They made us feel safe, they gave us the confidence and encouragement when we needed it, they were fun and interesting and even when they were exhausted and spent, they made sure that we were comfortable and looked after every step of the way” (www.ultimatekilimanjaro.com).

“Robert should be commended for running a tight ship. He is a great guide with a great team. He is somebody I will stay in contact with” (www.ultimatekilimanjaro.com).

“The guides were amazing, the porters were decent and trustworthy, the entire crew surpassed expectations by several nautical miles” (www.climbingkilimanjaro.com).

“We felt like family and we were well taken care of” (www.ultimatekilimanjaro.com).

Over and above the porters’ task of carrying, it is their duty to secure an acceptable flat area for overnight camping. According to Du Plessis (2014), “the porters effortlessly ran up and down the paths with 20kgs of food and odd-shaped
luggage on their backs and heads – think camping chairs, pots and portable toilets”.

“They carried so much more stuff than we did (on their heads!) and were able to run ahead of us and set everything up so we literally didn’t have to do anything at camp”(www.ultimatekilimanjaro.com).

“The porters were low profile but always managed to select the best locations to make camp” (www.ultimatekilimanjaro.com).

“It was very impressive what the porters were able to do physically. They packed up camp after we started hiking, passed us on the trails and got everything set up and ready to go by the time we arrived”(www.ultimatekilimanjaro.com).

“By the time we would reach our camps, our tents would be up, warm water to wash-up and the freshly cooked meals almost ready” (www.ultimatekilimanjaro.com).

Due to the difficulty of the trip, it is necessary that the support staff keep the morale high in along the journey and at the camp sites.

“They worked hard and had great attitudes. We enjoyed their songs” (www.ultimatekilimanjaro.com).

“For many of us reaching the summit many have not be possible without the motivation to push us on when the body wants to stop, cajoling when we wanted to give up, singing when we were falling off to sleep while walking, lifting of the human spirit the end seemed too far away, and finally when all our energy was gone literally pulling us up in the really difficult parts of the summit”(www.climbingkilimanjaro.com).

“On summit night the guides kept us moving forward, building morale along the way, with their songs and encouragement, this is the toughest part of the week and their support makes a huge difference”(www.ultimatekilimanjaro.com).

Tourist information

In addition to the above, selecting a good service provider is critical because trekkers rely on the information provided by the service provider for a successful trip. It is the responsibility of service providers to supply trekkers with a comprehensive list of items that are necessary for the trip to be endurable. For example, knowledge of the required correct equipment such as sleeping bags, hiking boots and other equipment is vital as temperatures can be as low as -16degrees Celsius and trekkers need sleeping bags that will keep them warm during the night. One service provider explained the need for information and careful selection of the correct equipment as follows:

“All relevant information such as information packs … is sent to the hikers in a timely manner. Securing proper gear such as mountain tents are expensive and most of it is designed to be used for 3 or 4 trips per year – not 3 or 4 trips per month”(www.ultimatekilimanjaro.com).

A good service provider provides trekkers with a list of the required training procedure before they attempt to climb Kilimanjaro. One does not have to be super fit, but a certain level of fitness is necessary(www.ultimatekilimanjaro.com).

Congestion of routes

Another logistical challenge of mountain climbing is the congestion of visitors trekking to and from the summit (Spenceley, 2010). The trails often show signs of erosion, which is not good for the environment (Peaty, 2012). As a result of congestion, guides discuss among the various groups which group will depart first. In as much as these discussions are
meant to reduce congestion, the ultimate reduction of congestion on trails depends on the level of trekkers’ fitness. The faster ones go first because if the slackers go first, the faster ones will have to overtake them and often the paths are too narrow to allow passing. Another useful strategy to reduce congestion, according to Spenceley (2010), is to spread hikers between routes more evenly. The quote below depicts how congested the Kilimanjaro routes can be:

“At the beginning the campsites had little traffic. As we approached the summit and the numbers increased, our guide, assistant guide and porters always ensured that we had a great camping spot with access to toilets, etc. - you would be amazed at how important this becomes”(www.ultimatekilimanjaro.com).

Inadequate response to customer rescue problems

Inadequate response to customer rescue problems is another logistical challenge of trekking to the summit of Mt Kilimanjaro. In most cases the trekkers rely on two porters to carry them down the mountain if something goes wrong, considering the long distance down the mountain. In this regard, most chief guides receive first aid training both from Kilimanjaro National Park, before they are awarded their licences, as well as from the African Walking Company (www.africatravelresource.com). If there is a problem along the way, the guide should take the initial action and inform the responsible authorities. Picture 3 shows a rescue “wheelbarrow” that is used as an ambulance in cases of emergency.

Inadequate resources

There are also logistical challenges of carrying adequate key resources such as food, water and firewood along on the trip. For instance, there is an inadequate water supply especially at higher elevations of
the mountain, hence porters have to collect water and walk for long distances. It is essential that porters carry adequate water supplies until the following water reservoir. Therefore, conserving water is a priority on the trip because the entire climbing team would need water for drinking, cooking and dry bathing. In addition to ensuring an adequate water supply, the porters need to boil drinking water, which is offered every evening to the trekkers to refill their water bottles.

Provision of food

As mentioned earlier, carrying adequate and nutritious food supplies for the entire trekking team is an indispensable part of the trek. A healthy diet on the mountain is crucial and it should be carefully controlled and monitored. A high liquid and carbohydrate content is essential, with fresh ingredients wherever possible (www.africatravelresource.com). As a result, service providers endeavour to choose their ingredients carefully to ensure that the food prepared by the cooks is tasty and has a high energy content that is easy to digest at altitude. In certain instances, vegetarians have to be catered for to ensure that meals meet their culinary requirements. Mitchell et al. (2009:5) estimate that for an adequate diet an average expenditure on food and beverages of US$10 should be allocated per climber per day.

According to Spenceley (2010:38), “90% of food and beverage expenditure is locally sourced from poor small-holder farmers via the local market in Moshi”. However, the local market has a limited variety of food products. One of the service providers commented as follows:

“Moshi and Arusha town is far away from bigger cities like Dar es Salaam and Nairobi. You are limited what you can get in Moshi / Arusha and supply of what we can get is not very consistent…” (www.ultimatekilimanjaro.com).

Correct timing of purchasing and selection of quality fresh food products are important. The apparently simple task of overseeing the packing of foodstuffs is a key logistical challenge and leaves no room for error due to the delicate nature of certain foods.

An adequate diet which includes fresh fruit should be a priority. Although fresh fruit is cheap at the market, carting enough for a healthy diet poses logistical challenges because some of the fruit is highly perishable.

If food needs to be prepared with limited facilities, it is critical to uphold basic standards of hygiene to avoid stomach problems. The quote below emphasises this point:

“On the way to… an assistant guide noticed that a porter from a rival group was gathering murky water at a low end of a stream by the trail. He correctly advised him to walk further upstream to gather water as it would be less contaminated. The porter then emptied his water container and started hiking up the ridge following advice (www.ultimatekilimanjaro.com).

In addition, if cooks are inadequately trained the food will most likely not be palatable for trekkers suffering from the effects of altitude. The cooks should make sure to start the preparation of meals at the right time so that the food is ready and warm enough to eat when the climbers arrive at the camping site. Below are quotes from the climbers regarding the menu on the mountain:

“So he made French toast, delicious pancakes and flat bread, and spiked the fresh vegetable sauce, my favourite, with flour and pasta. Every afternoon when we put up tents, I’d get popcorn and tea, and runny millet porridge with some egg and fried potato in the morning” (www.ultimatekilimanjaro.com).

“Coffee in bed every morning was definitely a highlight...! The food was great, it was very hard to lose your appetite even at 4 600m with
the dishes that were put in front of us” (www.ultimatekilimanjaro.com).

“David ‘Delicious’ our cook was a maker of brilliant meals and well and truly lived up to his name! How he conjured his culinary delights whilst on the go and without a full kitchen will remain a mystery – but we were thankful at each and every mealtime” (www.ultimatekilimanjaro.com).

Ablution facilities

Another logistical challenge of trekking to the summit of Mt Kilimanjaro is unhygienic ablution facilities. The toilets provided at each campsite by the National Park authority are generally in an undesirable state due to the manner in which they are used by some operators and trekkers and the inadequate sewage treatment in the pit latrines used by the tourists and support staff on the mountain. In most cases, the state of the facilities has little to do with the fundamental defect in their design. Due to the unattractive nature of the toilet facilities, trekkers and support teams often relieve themselves in the bush, leaving used toilet paper lying around. This scenario is not only unpleasant for everyone trekking to the summit; it also poses an environmental challenge.

Although the Mt Kilimanjaro general management plan makes provision for infrastructural improvements, there is still a long way to go in terms of increasing the infrastructure and maintaining these facilities. As a result of these challenges, most tourists hire portable toilets. Although hiring portable toilets is an “alternative solution” to the undesirable state of the available facilities, it is not without its problems. For example, it is unpleasant for the porters to carry away human waste and then clean the portable toilets. At the same time it is difficult for trekkers to carry their used toilet paper in their backpacks until the time they hand over the garbage to the porters.

The following extracts give an indication of how trekkers feel about the help given by porters in the mountain regarding the ablution facilities:

“….and I think the toilet engineer got the biggest cheer when we said farewell”(www.ultimatekilimanjaro.com).

“The toilet porter was also a life saver…” (www.ultimatekilimanjaro.com).

Conclusion

Tourism is one of the largest and fastest growing sectors of the world economy. Tourism is a popular component of development strategy in Africa, and Tanzania is recognised as one of the least developed countries that have abundant tourist assets that are essential for economic growth. There is currently a dearth of research on tourism in developing countries such as Tanzania, particularly within the field of trekking tourism. Supply chain management is particularly important for gaining a competitive advantage in a fiercely competitive global market.

In this article the focus is on the supply chain management challenges of trekking tourism within the African continent. Against this background the authors explored the supply chain management challenges of trekking to the summit of Kilimanjaro and identified key research gaps in the tourism trekking industry which provide a basis for further debate in the research area.

The authors presented the findings of an extensive literature survey and one of the authors’ personal experiences as a trekker to the summit, as well as comments from the service providers. In a nutshell, it can be concluded that the main challenges affecting trekkers can be categorised into macro and micro challenges as follows:

Macro challenges:

- Changing weather patterns
- Health- and safety-related challenges
• Political changes

**Micro challenges:**

• Waste recycling and garbage collection
• Service providers
• Quality of service provided by support staff
• Tourist information
• Congestion of routes
• Inadequate response to customer rescue problems
• Inadequate resources
• Provision of food
• The ablution facilities are poor.

It is recommended that trekkers ensure that they choose a quality service provider, rather than focus on cost alone, and also procure/hire the correct hiking equipment.

The main limitation of this study is that challenges were identified from a literature review, an interview with a manager from one of the service providers from Mt Kilimanjaro trekking companies and netnography and that it also drew from one of the authors' experiences as a trekker to the summit of Kilimanjaro. Consequently, it is possible that not all challenges have been identified. However, the identified challenges could form the basis for further debate in the research area.

**References**


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