

# **Exploring the attitude of Chinese self-drive tourists towards driving safety in New Zealand**

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## Abstract

Road safety is a global issue that has been given attention in many countries. In tourist destinations, a high rate of car accidents can negatively influence the tourism market image. Self-drive tourism has become popular in China in the past decade, and along with the rise of the self-drive travelling trend, New Zealand has become a popular destination, attracting thousands of Chinese self-drive tourists. However, the number of car crashes of Chinese self-drive tourists has gradually increased, which not only endangers tourists and locals but also impacts on New Zealand's image in the Chinese market. New Zealand official reports show that international drivers from right-side driving countries are the main at-fault group in international car accidents due to their driving on the wrong side of the road and not obeying 'Give Way' rules (Ministry of Transport, 2017). China is the second-largest inbound tourism market of New Zealand (Statistics New Zealand, 2018), brings significant economic benefits, and promotes the development of tourism. However, the number of Chinese visitors in fatal or injury crashes in New Zealand ranked third of international visitors' car crashes, which was over 100 drivers in 2016 (Ministry of Transport, 2017), negatively affecting word-of-mouth advertising of New Zealand tourism in China. Therefore, understanding Chinese self-drive tourists' attitudes towards road safety in New Zealand is important. Netnography is employed in this study to identify the themes and patterns in online reviews posted by Chinese self-drive tourists who visited New Zealand. The results showed most self-drive tourists were young or middle aged, and travelling with friends. A lack of tourism infrastructure, poor car condition, and bad weather, were the main reasons given for road accidents. The findings of this qualitative study have important implications for the New Zealand tourism industry and Government, in managing the road safety of international tourists.

**Key words:** *Chinese tourist, self-drive tours, road safety, New Zealand*

# Table of Contents

Abstract.....	i
Table of Contents .....	ii
List of Tables .....	v
Attestation of Authorship .....	vi
Acknowledgements .....	vii
1. Introduction .....	1
1.1 Background to the research .....	1
1.2 Research questions .....	2
1.3 Research design .....	3
1.4 Contents of the dissertation .....	3
2. Literature Review .....	5
2.1 Introduction .....	5
2.2 Concept and development of self-drive tourism .....	6
2.3 Benefits of self-drive tourism .....	6
2.4 Self-drive tourism in Western countries .....	7
2.5 Drive tourism in China .....	7
2.6 Chinese driving culture.....	9
2.7 Chinese self-drive tourists and road safety when driving overseas.....	10
2.8 Language barriers and driving safety .....	11
2.9 Five safety concerns of Chinese self-drive tourists .....	12
2.10 Summary.....	13
3. Methodology.....	15
3.1 Introduction .....	15
3.2 Research paradigm .....	15
3.3 Research design .....	16
3.3.1 Research aim.....	16
3.3.2 Target population.....	16
3.3.3 Netnography .....	17
3.4 Data collection process.....	18

3.5 Data analysis.....	20
3.6 The trustworthiness of the research.....	22
3.6.1 Credibility .....	22
3.6.2 Transferability.....	23
3.6.3 Dependability.....	23
3.6.4 Confirmability .....	23
3.7 Summary.....	24
4. Research Findings .....	25
4.1 Introduction .....	25
4.2 Demographic information .....	25
4.3 Sources of information for Chinese self-drive tourists regarding traffic rules and road conditions before driving in New Zealand .....	27
4.3.1 From official websites .....	27
4.3.2 From Zuzuche .....	28
4.3.3 From rental car companies.....	28
4.4 Safety problems that Chinese self-drive tourists might have when driving in New Zealand .....	29
4.4.1 Undeveloped tourist infrastructure .....	29
4.4.2 Personal factors that impact on driving safety .....	33
4.4.3 Extreme weather.....	35
4.4.4 Poor car condition .....	35
4.5 How Chinese tourists get help when they encounter problems during self-drive tours in New Zealand.....	36
4.5.1 The relevant organisation .....	37
4.5.2 The local people.....	38
4.6 Summary.....	38
5. Discussion.....	40
5.1 Introduction .....	40
5.2 Reviewing the research.....	40
5.3 Demographic characteristics of Chinese self-drive tourists in New Zealand.....	40
5.4 The main reasons for Chinese self-drive tourists to encounter safety problems on the road .....	41
5.4.1 External reasons.....	42
5.4.2 Internal (personal) factors.....	45
5.5 Language barrier affects decision-making for self-drive tourists.....	48
5.6 Suggestions to the government, rental companies, and Chinese self-drive tourists.....	49

5.6.1	The New Zealand Government .....	50
5.6.2	The rental companies .....	50
5.6.3	Chinese self-drive tourists .....	52
5.7	Summary .....	53
6.	Conclusion .....	55
6.1	Introduction .....	55
6.2	Highlights of the research.....	55
6.3	Significance of the research.....	57
6.4	Limitations and future research .....	57
7.	References .....	60
8.	Appendices .....	66
8.1	Examples of online postings from Mafengwo.cn.....	66
8.2	Examples of online posting from Qyer.com.....	67
8.3	Examples of database contents .....	68
8.4	The booklet <i>Driving in New Zealand</i> .....	69

## List of Tables

Table 1: Six steps of thematic analysis.....	20
Table 2: Trustworthiness criteria.....	22
Table 3: Demographic Characteristics of Chinese Self-Drive Tourists .....	26

## Attestation of Authorship

*I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.*

Chenxi Li

A handwritten signature in black ink, appearing to be 'Chenxi Li' in a stylized, cursive script.

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# 1. Introduction

## 1.1 Background to the research

With the development of living standards and increased leisure time, outbound travel has become a popular choice for Chinese tourists (Jin & Wang, 2016), and self-drive is the preferred means of travel for many young Chinese tourists overseas (Qiu, Hsu, Li, & Shu, 2018). New Zealand is a tourism country with a unique natural environment and Māori culture, so it attracts many Chinese tourists to travel, and has become one of the self-drive tourists' favourite destinations (Sun, Ryan, & Pan, 2015). China is the second largest inbound tourism market in New Zealand (Stats NZ, 2018), which brings significant economic benefits and promotes the development of tourism. However, the high accident rate of Chinese self-drive tourists not only poses a serious threat to the safety of tourists and locals, but also creates a poor market image.

According to official data, from 2013 to 2017, the number of Chinese visitors has grown by around 83%, but Chinese nationals have the most fatal and injury crashes in New Zealand, with around 385 accidents (New Zealand Government, 2018). In 2016, the number of Chinese visitors in fatal or injury crashes in New Zealand ranked the third highest in international visitors' car crashes with over 100 drivers (Ministry of Transport, 2017). Specifically, the official report noted that the largest increase in crashes also involved overseas drivers from China in 2016. Based on the official report, the main group of Chinese visitors in crashes is that of young males aged 25-34, which also is the main group of self-drive tourists in New Zealand (Ministry of Transport, 2017). According to previous research, the most significant reason for car crashes for international self-drive tourists is the transition from left-side to right-side driving (Wilks, Watson, & Faulks, 1999). The result was validated in the official report, and shows that international drivers who come from right-side driving countries is the main at-fault group in international car accidents due to their driving on the wrong side of road and not obeying 'Give Way' rules (Ministry of Transport, 2017). Furthermore, there have been reports in recent years that local people are unhappy with the way Chinese self-drive tourists drive in New Zealand. Some local news items have shown that some local residents have clashed with Chinese self-drive tourists on the road because of the Chinese self-drive tourists' incorrect driving behaviours. High numbers of international car accidents and upset local people might damage the image of reputation of New Zealand driving tourism in the Chinese market.

Therefore, studying Chinese self-drive tourists' driving behaviours and awareness of road safety in New Zealand is important in a quest to deal with the high rate of Chinese self-drive tourists' car crashes.

So far, there is little research into Chinese self-drive tourists' attitudes and perceptions of road safety in New Zealand. Examining Chinese self-drive tourists' own views of road safety in New Zealand and identifying their actual driving experiences in New Zealand could help New Zealand tourism suppliers and transport sectors better understand the attitudes of Chinese self-drive tourists towards driving safety in New Zealand. This research will also improve awareness of personal safety of Chinese tourists and enhance driving experiences in New Zealand.

## **1.2 Research questions**

The purpose of this research is to identify Chinese self-drive tourists' awareness of road safety in New Zealand based on their driving experiences. Therefore, there are three questions in this research:

1. What do Chinese tourists know about traffic regulations and road conditions before driving in New Zealand?
2. What safety problems might Chinese self-drive tourists face when driving in New Zealand?
3. Where do Chinese tourists get help when they encounter problems during self-drive tours in New Zealand?

In order to explore the attitudes of Chinese self-drive tourists towards driving safety in New Zealand, the following three research objectives were established:

Objective 1: To determine what Chinese tourists know about traffic regulations and road conditions before driving in New Zealand.

Objective 2: To determine the safety problems Chinese self-drive tourists might face when driving in New Zealand.

Objective 3: To determine where Chinese tourists ask for help when they encounter problems during self-drive tours in New Zealand.

### **1.3 Research design**

This research aims to discover Chinese self-drive tourists' actual driving experiences in New Zealand and identify any safety problems that they might have encountered. Therefore, netnography is considered a suitable method for data collection. Netnography is a qualitative methodology that collects data from virtual communities (Tavakoli & Mura, 2018). In this research project, information was collected from two well-known Chinese tourism websites. On both websites, many active online users have published posts to share their real travel experiences with pictures and text, including their travel schedules, routes, and sudden events during the journey. Because the research target is Chinese self-drive tourists who have had driving experiences in New Zealand, forum posts from the New Zealand self-drive tourism group were selected, using 'road safety' as keywords to search for content that conformed to the objectives of the research. After data collection, thematic analysis was applied to help identify themes around Chinese tourists' attitudes towards road safety in New Zealand from the online forum. The collected information was sorted and classified into different themes according to the content and research objectives, and new theme names assigned to each category of information. Findings are based on this thematic data analysis.

### **1.4 Contents of the dissertation**

The first chapter is an introduction. It introduced the background of the research, and explained the reasons for doing this research. Then, the research questions and research aim were presented. It also briefly described the research design and methodology is used in this research, and finally, it briefly introduces the contents of the dissertation.

The literature chapter reviews research related to self-drive tourism and Chinese self-drive tourists' driving behaviours. It first introduces the definition of self-drive tourism, including the concept and development of self-tourism and the benefits of self-drive tourism. In addition, it presents research on self-drive tourism in Western countries and in China. Then it explains the Chinese driving culture, using this to explain Chinese self-drive tourists' driving behaviours. The issues of Chinese self-drive tourists and road safety in overseas destinations are also discussed, based on an Australian study.

The methodology chapter details the methodology used in this research project. The first section introduces the research paradigm, including the introduction of the interpretive

paradigm and netnography used in this research. The following section explains the research design, and describes the research aim and target population. Then the method of data collection is presented, including a detailed description of the data collection process. The fourth section outlines the data analysis. Thematic analysis is used, and the steps involved are listed and explained. Finally, the limitations of the research method are discussed.

The Findings chapter describes the results of the research. The chapter starts with demographic information about the participants, which includes nine items: gender, present address, age range, traveller types, travel time, car rental type, travel days, where in New Zealand they travelled, and whether they had prior overseas experience. The results provide answers to the research questions based on the thematic analysis. Narrative examples are cited as the evidence for the findings.

The discussion chapter is divided into three sections. Firstly, it reviews the research. Then, it summarises the demographic characteristics of Chinese self-drive tourists in New Zealand, and in combination with the literature, discusses the key findings of the research. Finally, it points out some implications of the research based on the discussion of results.

The Conclusion chapter first summarises the key findings of this research and then discusses the significance of the study. It also identifies the limitations of the research and provides recommendations for future research in the area of Chinese self-drive tourism and safety.

## **2. Literature Review**

### **2.1 Introduction**

Road safety is a global issue that has been given attention in many countries. In tourist destinations, a high rate of car accidents can negatively influence the tourism market image. Self-drive tourism has become popular in China in the past decade. Along with the rise of the self-drive travelling trend, New Zealand has become a popular destination, attracting thousands of Chinese self-drive tourists. However, the number of car crashes of Chinese self-drive tourists has gradually increased, which not only endangers tourists and locals but also impacts on New Zealand's image in the Chinese market. New Zealand official reports show that international drivers who come from right-side driving countries are the main at-fault group in international car accidents due to their driving on the wrong side of the road and not obeying 'Give Way' rules (Ministry of Transport, 2017). China is the second-largest inbound tourism market for New Zealand (Stats NZ, 2018), which brings significant economic benefits and promotes the development of tourism. However, the number of Chinese visitors in fatal or injury crashes in New Zealand ranked third in international visitors' car crashes, with over 100 drivers in 2016 (Ministry of Transport, 2017), negatively affecting word-of-mouth advertising of New Zealand tourism in China. Therefore, understanding Chinese self-drive tourists' attitudes towards road safety in New Zealand is important.

The traffic rules and driving habits are very different between China and New Zealand. Therefore, understanding the development of self-drive tourism in China and the Chinese driving culture can help researchers better understand Chinese self-drivers' driving habits and their attitudes towards self-drive travelling. Two decades ago, car crashes were the main reason that international tourists were injured or killed on a trip (Wilks, Watson, & Faulks, 1999). In this research, knowing the reasons for car crashes among international tourists and international tourists' driving behaviours in foreign destinations is essential, because these may help researchers investigate Chinese self-drive tourists' potentially risky driving behaviours when driving in New Zealand. The following section reviews research on self-drive tourism in China, the Chinese driving culture, and the reasons for international tourists' car accidents.

## **2.2 Concept and development of self-drive tourism**

Self-driving travel refers to travelling 'by car that is either privately owned or rented, and engaging in tourism-related activities during the journey (Prideaux, Ruys, & Wei, 2001). In some research, the precursor of self-drive is referred to as the 'Sunday drive'. The concept of a Sunday drive was recorded in the United States of America (USA) in the 20s-30s of the twentieth century, and was an automobile tour for leisure and entertainment purposes without any specific destination (Zhou & Huang, 2016). Drive tourism satisfies tourists' desire for creating a unique travel experience so they may gain something more meaningful from their travel, such as achieving personal growth and enhancing their personal skills during the journey (Prat & Aspiunza, 2014). Self-drive tourists prefer to be called 'travellers' rather than 'tourists', because they pursue real personal experiences such as interactions with local customs, people and the environment, rather than experiences created by tourism providers (Zhou & Huang, 2016).

## **2.3 Benefits of self-drive tourism**

As a type of free independent travel, self-drive tours provide a chance for tourists to conceptualise and plan their individual travel itinerary (Becken & Wilson, 2007). Through self-driving, the tourists not only have more options to select a destination and manage the time (Olsen, 2003), but also, they must think about how to overcome difficulties on the road, which is a process of self-improvement. Furthermore, self-drive tourists can enjoy more time with their friends and family on the road, which can improve their relationships (Hallo & Manning, 2009). For Chinese tourists, self-driving has the added advantage of making it easy to go shopping (Wu, Pearce, & Li, 2018). Chinese people enjoy shopping at a destination. It is convenient for them to go to a shopping centre with their own car, and have enough space to place things they have bought (Wu, Pearce, & Li, 2018). In addition, some researchers have pointed out that self-drive tourism is different from other public transportation. It helps self-drive tourists get closer to the local people and culture, and therefore brings more economic benefits to local communities (Prideaux & Carson, 2003). Compared with public modes of transport, self-driving means that tourists might spend extra money on the road, and not just at their destinations. Therefore, self-drive tourism has significant potential for destination development.

## **2.4 Self-drive tourism in Western countries**

Drive tourism is well-developed in Western countries. For example, drive tourism in Australia is a mature form of travel, especially in Queensland. The Queensland Government regarded drive tourism as an important type of tourism activity, stating that '*Queensland can be positioned as a world-leading drive tourism destination*'. In 2012, the Queensland Government produced a drive tourism strategy for Queensland in 2013 – 2015. In this strategy, the Government listed clear strategies for road conditions, signage and roadside infrastructure, to ensure that tourists could have a convenient, comfortable, and safe driving experience (Queensland Government, 2012).

In the late 1990s, the Queensland Tourist Administration began exploring the influences of tourism-themed routes in drive tourism (Olsen, 2003). Olsen (2003) pointed out that developing a themed route could attract more self-drive tourists. A themed route is a tourism project that tourism developers and the related committee of regional stakeholders build and manage. Self-drive tourists can visit many scenic areas when driving on a themed route. Furthermore, there are many travel establishments and tour services such as accommodation, restaurants and rest stops on the way. Distances between tourist attractions are shorter on themed routes, and self-drive tourists are encouraged to participate more in tourist activities around attractions. Thus, drivers can avoid driving for too long at a time, preventing them from driving while fatigued. Furthermore, themed routes have relatively better infrastructures and traffic facilities, which provide a safer driving environment. Therefore, a tourism themed route is an effective means for self-drive tourists to improve road safety and driving experiences. At present, there are over 20 themed routes in Australia. As shown on the websites, some of the themed routes have their own logos, branding, and social media accounts for better promotion.

## **2.5 Drive tourism in China**

The automobile industry started relatively late in China, and cars entered common family life only a few decades ago. Therefore, drive tourism in China has been developed for only a short time, but has grown vigorously since the 1990s. According to official publications, the development of drive tourism experienced three stages. According to a study by Wu (2017), at first, cars gradually entered into people's lives from the 1990s, and some Chinese people started to drive themselves for travel, rather than use public transport. In an earlier study,

researchers found that self-driving travel was deemed to be a reflection of social status and income level because private cars were not common at that time (Zhang, Zhang, & Ma, 2006; Zhou & Huang, 2016). Since 2001, the Chinese government has generated policies to encourage individuals to buy their own cars (Wu, 2017). Furthermore, the increases in individual income, infrastructure improvements and road building has stimulated Chinese people's desires to buy cars (Wu, 2015). Consequently, an increasing number of Chinese families have private cars. With the improvements in living conditions, Chinese people pursue a more spiritual life. They want to experience new things, search for their true self, or develop self-awareness (Zhou & Huang, 2016). Self-drive touring became the most popular travel mode in China since 2001, and the population of self-drivers has become the largest group of tourists in China (Wu, 2017). The development of Chinese drive tourism started in the coastal cities, then increased in inland areas over time (Wang, Fang, & Du, 2011). The year 2016 was a milestone for the development of drive tourism, and it was the beginning of the third stage. Since 2016, the government has implemented policies and measures to encourage the development of drive tourism to maintain the healthy development of the self-drive travel market (Wu, 2017).

Zhou and Huang (2016) studied the motivations for Chinese self-drive travel, and identified three categories of Chinese self-drive tourists: appreciators, interactors, and moderators. According to their research, the main group of Chinese self-drive travellers is that of the appreciators. It is for a simple purpose that they select self-driving – they enjoy travelling. They release pressure during the trip, relax the mind, and escape from reality. The second largest group is that of the interactors. The most obvious feature of this group is their interest in social life during self-drive travel. Chinese people share their own travelling experiences and beautiful scenic pictures on social media to gain a sense of superiority or obtain recognition in their community (Munar & Jacobsen, 2014; Zhou & Huang, 2016). Chinese self-drive tourists can experience different cultures and environments in the local community (Liu, 2018), meet new people, and learn new things (Zhou & Huang, 2016).

These self-drive tourists enjoy the advantages of self-driving travel such as the increased freedom and flexibility of a self-drive holiday. The third group lie somewhat in between – they do not have distinctive characteristics, and nor do they have clear purposes and intentions. These people are the moderators. Research has shown several distinctive features of self-drive tourists such as youth or middle-aged groups (Feng, 2008), good education, and



high income (Zhang, Zhang, & Ma., 2006). Such people would not be satisfied with normal package tours, as they have higher requirements for quality of tourism products and services (Wu, 2015). Zhou and Huang's (2016) study found the age of most appreciators and moderators was relatively younger than that of the interactors in their study participants. In general, the peak travel season is the Chinese New Year (often in January or February), the golden weeks of Labour Day (in May) and National Day (in October), and long school holidays (Wang, Fang, & Du, 2011). Most appreciators and moderators will take a journey in these periods. However, recent studies have found that some Chinese self-drive tourists such as the interactors, have started to pursue higher quality travel, and prefer to select overseas destinations, and travel during annual leave to avoid the height of tourist seasons, as the crowds of people and traffic jams reduce the quality of tourism (Wu, 2015; Zhou & Huang, 2016).

## **2.6 Chinese driving culture**

Although the development of the automobile industry has a short history in China, Chinese people have their own way of learning and understanding the traffic rules and operations of driving, which are different from that of other Western countries. Zhang et al. (2006) discovered the differences in understanding of driving between Chinese drivers and American drivers. Their study had two steps. In the first step, the researchers interviewed drivers from China and America about their views on driving safety. From the interviews, they found that both driver groups considered that physical and mental health, high safety awareness, and obeying the rules were the key characteristics of safe drivers. Furthermore, the participants believed driving experience can have a significant impact on driving behaviours; drivers drive more cautiously with more driving experience. However, Chinese drivers and American drivers held different views on safe driving. Compared to American drivers, the researchers found that Chinese drivers emphasised personal reasons such as driving skills, health conditions and driving experience, rather than external factors such as traffic signs and driving environments, and how to deal with one's own vehicle and other vehicles in particular circumstances. Moreover, some Chinese drivers stated that they did not understand the importance of proper driving operation. For example, Chinese drivers trust their own judgment on the use of lights, rather than adjusting the light according to the change in driving environment, such as using high beam on a crowded street. This was confirmed in the second

part of the research, in which the researchers observed driving behaviours on the road in China and the USA.

There are two other reasons that can impact on Chinese drivers' understanding of driving. Firstly, social class can impact on Chinese people's understanding of the importance of road safety. Zhang et al. (2006) also pointed out that drivers' behaviour was the most significant element related to road safety in China. However, personal background and social status can also influence drivers' behaviours in Chinese culture (Xie & Parker, 2002). Xie and Parker (2002) deemed that Chinese people prioritised their personal rights and status over laws and regulations. Social status can therefore negatively affect traffic accident treatment. Some lower class people might experience unfair treatment when traffic law enforcement officials deal with accidents. This could lead to the traffic institutions' lacking in credibility among drivers. Some Chinese drivers do not believe traffic enforcers and are not motivated to abide by traffic rules. In addition, Chinese institutions and organisations associated with travel management do not focus enough on public education of road safety, which is another reason for the inadequacy of road safety awareness in China (Han, Singh, & Zhao, 2010).

Secondly, there are other dangerous behaviours that can directly or indirectly lead to road accidents. Chinese self-drive tourists rely on mobile telephones and the internet on the road (Wu, Pearce, & Li, 2018), and engage excessively in social interactions, such as frequently using cell phones or chatting with passengers, which can distract drivers (Zhang, Huang, Roetting, Wang, & Wei, 2006). Therefore, a lack of road safety awareness and overconfidence in driving skills are common problems in China, and have become part of a Chinese driving culture that seriously affects the development of drive tourism in China.

## **2.7 Chinese self-drive tourists and road safety when driving overseas**

Wilks, Watson, and Faulks (1999) showed that car crashes were the main cause of the injury and death of international tourists. Therefore, road safety is a serious problem that can influence the development of drive tourism. In the past, most tourism and related industries have not emphasised the road safety problem with international tourists, because they preferred to develop a good tourism image to attract international markets. As a result, negative news about road safety was rarely mentioned (Wilks, Watson, & Faulks, 1999). However, if the safety problems are ignored, and not properly regulated or dealt with, the image of a destination will be damaged in the long run (Page & Meyer, 1996). With the development of the driving tourism

market, road safety has become a serious concern that not only influences the image of the destination, but is also a significant influence on the competitiveness of a destination.

With the development of living standards and increase of leisure time, outbound travel has become a popular choice for Chinese tourists (Jin & Wang, 2016), and self-drive is the preferred means of travelling for many young Chinese tourists visiting overseas destinations (Qiu, Hsu, Li, & Shu, 2018). However, the unique Chinese driving culture is a potential cause of Chinese self-drive tourists' safety issues in overseas destinations. Although there is little research on Chinese self-drive tourists' accident causes overseas, much can still be deduced from previous studies that focus on international tourists' accidents. In many tourist destinations, renting a car is easy, with little "red tape". However, different countries have different traffic regulations and road conditions. Therefore, if international tourists do not make adequate preparations in enough time for driving in an unfamiliar country, many problems of road safety can arise, which can increase their risk of suffering a traffic accident. Based on previous research, improper driving operations and not following local traffic regulations are common problems, particularly in relation to difficulties with the transition from left-side to right-side driving (Wilks, Watson, & Faulks, 1999) and keeping to the left-road side of the road (Page & Meyer, 1996). In some specific cases, international tourists may be more likely to make driving mistakes. International self-drive tourists might drive while tired, because they have no concept of the distance between different destinations in an unfamiliar country, which is one of the potential factors that results in accidents (Wilks, Watson, & Faulks, 1999). If driving while fatigued, international tourists might lose concentration when driving, and habitually follow their customary traffic rules and driving behaviours, therefore increasing the risk of poor road safety (Wilks & Pendergast, 2010).

## **2.8 Language barriers and driving safety**

Language barriers are considered in many studies to be one of the greatest challenges for foreign self-drive tourists driving in overseas environments. In addition to learning the operation of the vehicle when learning to drive, it is important for drivers to understand the road signs and learn the traffic rules (Han, Singh, & Zhao, 2010), which is the key to road safety (Wu, Pearce, & Li, 2018). However, road signs are generally presented in English or other local languages. In order to explore the views of international tourists towards road signs in Thailand, Choocharukul and Sriroongvikrai (2017) analysed responses to a number of

questionnaire surveys. They found that language is critical for international tourists' understanding of local regulatory and warning road signs. Adding text to traffic signals was found to be useful only to locals, and not to international tourists. It was difficult for international tourists to understand the text content on road signs, and misunderstanding could affect their judgment about road conditions. Drivers needed to spend more time translating and understanding the meaning of the text; this shortened reaction time, so they missed the best time for dealing with information on road conditions, which could also increase risks to road safety (Han, Singh, & Zhao, 2010). Furthermore, personal backgrounds such as nationality and age (Choocharukul & Sriroongvikrai, 2017), and personal driving experiences such as driving style can directly affect international tourists' behaviours and confidence when they drive in an unfamiliar country (Han, Singh, & Zhao, 2010). In addition, meeting wild animals on the road (Wu, Pearce, & Li, 2018), changeable weather (Weiss, Kaplan, & Prato, 2014), and paying too much attention to viewing the scenery (Heggie & Heggie, 2004) can lead to accidents for international tourists while driving.

## **2.9 Five safety concerns of Chinese self-drive tourists**

Although some Chinese self-drive tourists lack safety awareness, some safety problems have been considered while travelling. Wu's study (2015) focused on Chinese recreational vehicle (RV) tourists (a subset of self-drive tourists) with Australian driving experiences. She collected and collated 37 Chinese blogs on internet forums, and analysed the content to summarise five aspects of safety concerns for Chinese RV tourists. They were: unfamiliar vehicles, unfamiliar roads, unfamiliar driving rules, unfamiliar accommodation, and personal reasons. Hiring an unfamiliar vehicle can be dangerous for self-drive tourists, especially to RV tourists. Unfamiliarity with the size and vehicle conditions can affect Chinese self-drive tourists' judgement in normal driving, such as when backing the car. Complex road conditions, long-distance driving routes and different traffic rules can cause Chinese tourists to make mistakes on the road. As mentioned before, Chinese people over-rely on their mobile telephones (Wu, Pearce, & Li, 2018). However, in some remote areas, the signals of Global Positioning Systems (GPS) and mobile telephones can be weak, causing Chinese tourists to get lost on the road (Wu, 2015). Chinese drive on the right-hand side of the road in China, so driving on the left is a potential risk factor for them, because they must change their current driving habits and behaviours. Therefore, if they are not able to adapt to new driving behaviours, they will be in danger on the road. Furthermore, personal factors such as confidence, driving experience,

driving habits and language skills can impact on Chinese self-drive tourists' driving safety on the road. Confidence was a particular viewpoint mentioned by Chinese self-drive tourists. They pointed out that they would have more confidence in driving if the local community responded in a more warm and friendly way towards tourists (Wu, Pearce, & Li, 2018). Furthermore, for RV tourists, finding a safe camping ground is another safety issue. For Chinese tourists, RV travel is a new concept, and they need to prepare themselves for staying overnight in their vehicle. Therefore, looking for a safe camping ground is a crucial issue for Chinese RV tourists (Wu, 2015).

## **2.10 Summary**

As more Chinese tourists choose self-driving as the main trip mode when travelling in foreign countries, road safety has become a serious problem that influences Chinese tourists' and locals' personal safety. However, there is little research about the road safety of Chinese self-drive tourists driving in overseas destinations. Therefore, this research will focus on Chinese self-drive tourists' attitudes towards road safety in New Zealand.

Based on the reviewed research, the factors leading to international tourists' crashes can be divided into two types: personal and external reasons. Unfamiliarity with local traffic rules and incorrect driving operations were the main contributing factors for international self-drive tourists' accidents. Furthermore, driving while fatigued and focusing too much on roadside scenery were potential safety problems for international drivers. Self-drive tourists need to learn and understand destinations' traffic rules and signs in advance, and become familiar with rental vehicles and vehicle operations before they start their journey (Wu, 2015). Moreover, gathering information about the location of rest stops when planning routes could prevent self-drive tourists from driving while fatigued (Wilks, Watson, & Faulks, 1999). Self-drive tourists need to pay more attention to road conditions and driving operations than to the scenery, in order to reduce the risk of road accidents (Hallo & Manning, 2009).

The review of literature has shown that Chinese drivers have a different understanding of driving, and their driving habits are different from those of drivers from other countries. Furthermore, language is a key element that influences Chinese self-drive tourists' driving in a foreign country. The cultural background of Chinese drivers can also affect driving behaviours when they drive in overseas destinations.

There is little research about tourists' attitudes towards road safety in overseas countries. Most of the literature has focussed on the reasons for international tourists' car accidents, by analysing objective data. China is the second-largest inbound tourism market for New Zealand (Stats NZ, 2018). However, there is no research about Chinese self-drive tourists' attitudes towards road safety in New Zealand. To understand their thinking about road safety in New Zealand and to know what safety problems they face in New Zealand and how they deal with these problems is important. Understanding this could help tourism developers and governments to look for effective approaches to improve Chinese self-drive tourists' awareness of road safety, or improve the safety of roads. Therefore, this research project studies the attitudes of Chinese self-drive tourists towards driving safety in New Zealand, and explores three questions:

1. What do Chinese tourists know about traffic regulations and road conditions before driving in New Zealand?
2. What safety problems might Chinese self-drive tourists face when driving in New Zealand?
3. Where do Chinese tourists get help when they encounter problems during self-drive tours in New Zealand?

This research project collects secondary data from Chinese online platforms. Netnography is used in this research, and is an important qualitative methodology in tourism research, used to study the perspectives of consumers in an online community (Whalen, 2018). Details of the methodology and methods of data collection and analysis are discussed in the next chapter.

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## **3. Methodology**

### **3.1 Introduction**

In this research, the main purpose is to explore Chinese tourists' attitudes towards road safety in New Zealand. This chapter is divided into five sections. The first section introduces the research paradigm that was used to provide a theoretical framework for the research design of the study. The second section describes the research design, including research aims and target population, and the third section discusses the method of data collection. The following section explains the data analysis, including the processes used in the data analysis. Finally, the chapter concludes with a discussion about the limitations of the research method.

### **3.2 Research paradigm**

The research paradigm involves three dimensions: ontology, epistemology and methodology (Blanche & Durrheim, 1999). In general, the ontology and epistemology concern the researcher's world view. They provide theoretical knowledge and a philosophy to explain the reality and the truth of the world, and directly influence researchers' thinking and actions. In brief, a research paradigm 'is a set of beliefs that is used to view the social world, and to guide researchers in how to take their actions in social and scientific study (Günbayi & Sorm, 2018)'. Therefore, selecting a valid research paradigm is important before conducting a research project.

In this research, the interpretive paradigm is applied. This research paradigm relies on researchers' subjective consciousness in understanding the nature of the world (Günbayi & Sorm, 2018). It is based on hermeneutics and phenomenology (Boland, 1985). A phenomenon is given meaning by humans, but in interpretive research, researchers try to understand the phenomenon through their personal views and give it meaning. The aim of interpretive research is to understand social phenomena through subjective reasons and meanings. The interpretive paradigm is commonly applied to qualitative research which is suitable for answering the research questions in this study.

### **3.3 Research design**

#### **3.3.1 Research aim**

The research aim refers to the main purpose of a research project (Thomas & Hodges, 2010). In this research, the aim is to explore the attitudes of Chinese self-drive tourists towards driving safety in New Zealand. Self-driving has become an increasingly popular mode for Chinese tourists to travel in New Zealand. However, driving in New Zealand is different from driving in China. Different road rules and driving habits are a challenge for Chinese tourists driving in New Zealand. Furthermore, the weather and special terrain can bring hidden dangers, compromising traffic safety. An official report shows that the number of Chinese tourists is growing year by year. In the five years from 2013 to 2017, the number of Chinese tourists increased by almost 83%; China is also the most frequently represented nationality of drivers with crashes (385) due to the Chinese people's irregular driving behaviours. These crashes are not only threats to the safety of Chinese tourists and locals, but they also have a negative impact on New Zealand's image as a destination in the international market. Therefore, understanding Chinese self-drive tourists' attitude towards road safety in New Zealand is important.

In a research project, there are generally several research objectives that explain the research aim in detail (Thomas & Hodges, 2010). The three objectives in this research are:

Objective 1: To determine what Chinese tourists know about traffic regulations and road conditions before driving in New Zealand.

Objective 2: To determine what safety problems Chinese self-drive tourists might face when driving in New Zealand.

Objective 3: To determine where Chinese tourists ask for help when they encounter problems during self-drive tours in New Zealand.

#### **3.3.2 Target population**

This research focuses on Chinese self-drive tourists' behaviours, and attitudes to road safety when travelling in New Zealand. Therefore, the target sample needed to meet all of the following inclusion criteria:



- Research targets must be from China, and must be short-term tourists in New Zealand. Chinese people who study or work in New Zealand are not included in the research sample.
- Research targets need experience of self-drive travel in New Zealand, or want to have driving experience in New Zealand. Research targets must have travelled to New Zealand in the past three years.
- Research targets post their New Zealand self-drive travel experience on Qyer.com or Mafengwo.cn social media platforms

All data were collected from Qyer.com and Mafengwo.cn. Suitable targets were selected from the websites specified, providing they met the inclusion criteria. The specific process for online data collection is discussed in the next section.

### 3.3.3 Netnography

With the development of Web 2.0, netnography has become a popular methodology applied in many tourism research studies. Web 2.0 has also been called ‘the social web’, as it can provide an online platform for tourism consumers and providers to communicate and interact regarding tourism products and activities (Tavakoli & Mura, 2018). Tourism consumers can share their tourism experience and provide suggestions on public online communities such as TripAdvisor, Facebook, and Instagram. In addition, online communities can help tourism providers and developers better understand tourism consumers’ requirements and expectations, so that they can improve their products and services (Tavakoli & Mura, 2018). Many travellers like to browse through comments and feedback from an online community before they purchase tourist products or determine their destinations (Fairchild, 2017). Using comments and feedback to extract information has high research value that helps researchers explore three groups’ (i.e. tourism consumers, providers and developers) views and attitudes towards tourism products and experiences through collecting the tourists’ feedback from online communities (Tavakoli & Mura, 2018; Whalen, 2018). Therefore, netnography has been widely applied in tourism research in recent years. Furthermore, for researchers, netnography has high efficiency and low research costs (Whalen, 2018), so researchers can spend less time collecting more and valid information and data from an online community. This project explores the attitudes of Chinese self-drive tourists’ to driving safety in New Zealand through netnography data collection from relevant websites.

### 3.4 Data collection process

Alongside the rise of virtual world, netnography was established to replace traditional ethnography to study online communities (Whalen, 2018). In most netnographic research in tourism, non-participant observation is the primary method of data collection (Whalen, 2018). Researchers can collect comments from virtual communities relevant to the research subject, then identify and categorise them, and define themes (Vaismoradi, Turunen, & Bondas, 2013). Due to the nature of qualitative analysis, large sample sizes are not required for data collection. The aim of data collection for qualitative analyses is the attainment of saturation, at which point, the researcher cannot find any further information in the samples (Glaser & Strauss, 2006). Therefore, researchers need to discover and describe a new phenomenon using appropriate sample sizes. In current research using netnography, there is no specific quantity requirement for data collection. However, for traditional ethnography, it was recommended to collect around 30-50 samples in the past (Morse, 1994). Therefore, 50 online posts from 2017 to 2019 are selected in this study to explore Chinese self-drive tourists' attitudes to road safety in New Zealand.

Qyer.com and Mafengwo.cn are popular travel websites in China. Both websites have an online forum about travel in New Zealand, and many Chinese self-drive tourists have shared their driving experiences through online posting. There are more than 1,000 results about self-drive tours in New Zealand on both websites, and each popular post has millions of page views and dozens of comments. Furthermore, Qyer.com is an older network about travel in China, having existed since 2004. The first posts about the experience of New Zealand self-drivers on Qyer.com were published in 2011. The development of Mafengwo.cn is relatively recent. There are fewer posts about self-drive experiences in New Zealand. The content of most posts is related to driving safety when conducting New Zealand self-drive tours. Each popular post has many comments published by online users who have had New Zealand self-drive experience. Therefore, the posts on these websites have excellent research value that helps researchers explore the experience of Chinese self-drive tourists in New Zealand.

In this research project, online postings and discussions from Chinese tourists in these forums are collected. Netnography is employed to identify the themes and patterns of online reviews posted by the Chinese self-drive tourists who have been to New Zealand.

Because this research project is mainly being focused on the perspective of Chinese self-drive tourists on road safety in New Zealand, 'New Zealand self-drive tour' and 'road safety' were key words used to identify the posts relevant to the purpose of the research. The homepages of Qyer.com and Mafengwo.cn have search engines which help with extracting information. Information such as travel notes and comment posts were then sorted by publication time, and 50 posts published between 2017 and 2019 on each website were selected. At the end of September in 2019, entering the keywords of 'New Zealand Self-drive tour' and 'road safety' in the search engines surrendered 233 results (travel notes and answer posts) on Qyer.com, and 50 results (travel notes) on Mafengwo.cn. The difference in the numbers of page views for each post was substantial - from 124 to over 136732-page views. The researcher focused on collecting posts with large number of posts. Based on the number of page views and release date, 50 posts were selected from both websites. For example, the 13 posts which were published in 2017 were collected from Qyer.com. while no posts were published in 2017 on Mafengwo.cn. Furthermore, some posters published their posts on both websites. Therefore, the 15 posts with relatively high page views were selected from Mafengwo.cn, and other posts were from Qyer.com.

Demographic information about online posters can be found on both websites. Personal information on each poster such as gender, age, home address and previous overseas travel experiences was available on their personal home page. Furthermore, traveller types (e.g. business or family), travel time (when they came to New Zealand), car rental type (the type of car rented for self-drive travel in New Zealand), travel days (how many days they travelled in New Zealand), and travel routes in New Zealand can be identified on the web page. This information can be accessed in their posts which shared the participants' New Zealand self-drive travelling experiences.

The online postings provided information about Chinese tourists' self-drive travel plans, driving experiences, difficulties and incidents encountered and how they solved problems. This information is related to the research questions. Therefore, each post was read, and contents relevant to the research questions were selected and the posts summarised individually. The summarised information was then categorised according to different themes. All information obtained from the online posts was in Chinese; the themes were translated after the data had been analysed.

### 3.5 Data analysis

Netnography combines various methods and techniques such as thematic analysis and content analysis (Mkono, 2012). In this research, thematic analysis was used to help identify themes around Chinese tourists' attitudes to road safety in New Zealand from the online forums.

Thematic analysis is a widely-used qualitative method. The main feature of thematic analysis is flexibility (Ryan & Bernard, 2003), because it does not need to have 'a particular epistemological or theoretical perspective' (Maguire & Delahunt, 2017, p.3352). Ahuvia (2001) noted that thematic analysis applies to visual as well as written text and can give the reader a holistic impression. Vaismoradi, Turunen, and Bondas (2013) summarised six processes of thematic analysis from Ryan and Bernard's research.

Table 1: Six steps of thematic analysis

<b>Thematic analysis</b>	
1. <i>Familiarising with data</i>	Transcribing data, reading and rereading the data, noting down initial ideas.
2. <i>Generating initial codes</i>	Coding interesting features of the data systematically across the entire data set, collating data relevant to each code.
3. <i>Searching for themes</i>	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. <i>Reviewing themes</i>	Checking if the themes work in relation to the coded extracts and the entire data set, generating a thematic map.
5. <i>Defining and naming themes</i>	Ongoing analysis for refining the specifics of each theme and the overall story that the analysis tells, generating clear definitions and names for each theme.
6. <i>Producing the report</i>	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a report of the analysis.

*Note.* Adapted from 'Content analysis and thematic analysis: Implications for conducting a qualitative descriptive study' by Vaismoradi, M., Turunen, H., & Bondas, T. 2013, *Nursing & Health Sciences*, 15(3), p.398-405.

According to the information in *Table 1*, the first step is familiarisation with the data. In this research, all information is about self-drive tour experiences in New Zealand, and includes text descriptions and photography. The next step is generating initial codes. Based on the research's aim and objectives, the initial codes were set around the responses to the following questions:

Question 1: What do Chinese tourists know about traffic regulations and road conditions before driving in New Zealand?

Question 2: What safety problems might Chinese self-drive tourists face when driving in New Zealand?

Question 3: Where do Chinese tourists get help when they encounter problems during self-drive tours in New Zealand?

Answers to each question were sought from the postings before copying information to a Word document. According to the content of the answers, key words were used as the initial codes for each answer. For example, many posters mentioned that poor road conditions and poor telephone signal caused them trouble on the road; therefore, the initial codes were “poor road conditions” and “poor phone signal”. The next step is searching for potential themes. Once every piece of information is assigned an initial code, it requires the researcher to categorise them, and put them into different potential themes (Vaismoradi, Turunen, & Bondas, 2013). Gibbs (2007) suggested that researchers should set a new code for each initial code before categorising. He pointed out researchers should set codes at “a more categorical, analytic and theoretical level” to replace any initial codes which are simply descriptive. In some studies, researchers indicated that these new codes can be used as an original theme (Maguire & Delahunt, 2017). The aforementioned, “poor road conditions” and “poor phone signal” were initial codes, both belong to infrastructure facilities. Therefore, the theme was established as “undeveloped tourist infrastructure”. The fourth stage is reviewing themes. This is a checking step. It requires researchers to check to ensure every piece of information is in accordance with the present theme (Maguire & Delahunt, 2017). Researchers must also consider whether themes conform to the research objectives, otherwise, they should be deleted (Maguire & Delahunt, 2017). The next stage is defining the final themes (Braun & Clarke, 2006). In this step, all themes relevant to the research aims and objectives are analysed in detail, named, and given a more technical definition (Maguire & Delahunt, 2017).

Finally, the report is produced. In this step, the research selects some original texts as examples on which to conduct analysis, and combines the research objectives and the literature, analysing these in detail (Braun & Clarke, 2006).

### 3.6 The trustworthiness of the research

The trustworthiness of research is also called the rigour of the research (Connelly, 2016). There are four criteria to ensure trustworthiness in qualitative research: credibility, transferability, dependability, and confirmability.

Table 2: Trustworthiness criteria

Trustworthiness criteria	
Credibility	Confidence in the “truth” of the finding
Transferability	Showing that the findings have applicability in other contexts
Dependability	Showing that the findings are consistent and could be repeated
Confirmability	A degree of neutrality or the extent to which the findings of a study are shaped by the respondents and not researcher bias, motivation, or interest.

*Note.* Adapted from ‘Creating protocols for trustworthiness in qualitative research.’ By Amankwaa, L. 2016, *Journal of Cultural Diversity*, 23(3), p.121-127.

#### 3.6.1 Credibility

The concept of credibility in qualitative research is analogous to internal validity in quantitative research (Connelly, 2016), and its aim is to ensure the reality of the findings of the research (Shenton, 2004). The aim of this research was to explore the attitudes of Chinese self-drive tourists to driving safety in New Zealand. The research focus was on the real driving experiences of Chinese self-drive tourists in New Zealand. Therefore, the research questions and objectives were designed around two time points of their New Zealand self-drive tour: before they came to New Zealand, and on their journey in New Zealand.

The data in this research were collected from popular Chinese tourism websites i.e. Qyer.com and Mangfengwo.cn. Both had a section for “New Zealand self-drive tours” (see appendix 1 and appendix 2), and 50 posts that related to road safety between 2017 and 2019 were randomly selected. Then, the research followed the process of thematic analysis to collect,

analyse and sort the information from the posts. The examples presented in the findings chapter were translated from the original text in the posts, and can be found in the database document (see appendix 3).

### 3.6.2 Transferability

“Transferability” means the findings of research can be applied to other groups, or the findings can make readers associate with their own experiences (Lincoln & Guba, 1985; Cope, 2014). The findings of this study are from the participants’ real driving experience in New Zealand. The study also collected some background information on participants from the posts, that related to New Zealand self-drive touring, such as the date they travelled to New Zealand and the type of car they rented. This information was part of the findings as well, and is a reference point for readers in similar situations, to make it easier to relate the findings to their own experiences.

### 3.6.3 Dependability

Dependability means the results would be similar if the research were repeated with the same method and participants (Cope, 2014). This study applied thematic analysis, and followed the process of thematic analysis to collect and analyse the data. All the data were from websites, and the original text was recorded in the database document (see appendix 3). Therefore, if the work were repeated, the results will be the similar to those in this research.

### 3.6.4 Confirmability

Confirmability in qualitative research corresponds to objectivity in quantitative research, which means the results of the research should be from participants’ answers, and researchers’ subjective consciousness should not impact on the results of the research (Cope, 2014). In this study, the researcher’s role was that of an observer and recorder. Furthermore, to ensure the confirmability, all findings were based on the original text from the websites, and the examples that were used in the findings chapter of findings can be sought in the database document.

### **3.7 Summary**

This chapter introduced the methodology applied in this research. This research collected secondary data from online communities. The interpretive paradigm was the research paradigm used in this study; it discovers and defines a new phenomenon through a researcher's subjective understanding. Netnography, a qualitative methodology, was applied, and 50 posts from the online communities of Qyer.com and Mafeng.cn were collected. Then Chinese self-drive tourists' attitudes to road safety in New Zealand were explored using thematic analysis. Information from online communities was classified and analysed, and new theme names created for the information. In the next chapter, key findings from these new themes are discussed.



## **4. Research Findings**

### **4.1 Introduction**

This chapter describes the results of the research. The first section of the chapter introduces demographic information followed by answers relating to the three research questions. Firstly, it presents what Chinese tourists know about traffic regulations and road conditions before driving in New Zealand, and the safety problems Chinese self-drive tourists might have when driving in New Zealand. The results regarding where Chinese tourists ask for help when they encounter problems during self-drive tours in New Zealand are described at the end.

### **4.2 Demographic information**

There were 50 posts collected from online platforms; 14 posts were from Mafengwo.cn and 37 were from Qyer.com. These posts consisted of text, with the majority also containing photographs. Most online users shared their experiences from travel preparation to actual experiences during their tours. Most posters included in their posts their fellow travellers and the schedule that they used when travelling in New Zealand. Some posters mentioned the cars that they rented and drove in New Zealand, including the size, type and car dealership. These form part of the demographic information that needed to be collected. Some information could be also found in posters' personal pages, such as gender, age, present home address and overseas experiences, which were also included in the demographic information.

Both Mafengwo.cn and Qyer.com do not require online users to state their age when they register, so there were difficulties in finding age information of posters with self-drive experience. However, this information was available in their personal or group photos in the posts. The photographs showed that the age groups of most Chinese self-drive travellers were young or middle aged, and the main traveller types were couples and families. Table 3 introduces the details of the demographic information, which were collected from the posts and personal pages.

Table 3: Demographic characteristics of Chinese self-drive tourists

Demographic characteristics	Frequency	Demographic characteristics	Frequency
	(n=50 posts)		(n=50 posts)
<b>Gender</b>		<b>Present Address</b>	
Male	17	South China	18
Female	29	North China	7
Not shown	4	Outside China	2
		Not shown	23
<b>Age Range</b>		<b>Traveller Types</b>	
18-30 years old	1	Business	-
31-40 years old	1	Couple or Family	33
41-50 years old	-	Friends	11
Over 50	5	Others	-
Not shown	43	Not shown	6
<b>Travel Time</b>		<b>Rental Vehicle Type</b>	
Chinese Labour Day	-	RV	1
Chinese National Day	1	SUV	26
Chinese New Year	9	MPV	1
Other	36	Car	14
Not shown	4	Other	-
		Not shown	8
<b>Travel days</b>		<b>Travel area in New Zealand</b>	
<7 Days	-	South Island	30
≥7 Days, <14 Days	28	North Island	-
≥14 Days	22	Both	20
Not shown	-	Not shown	-
<b>Whether they have had overseas experience</b>			
Yes	42		
No	-		
Not shown	8		

According to the demographic data, over half of the posters were female (29/50). From the home pages, it could be seen that most (42 posters) had travel experience in overseas destinations. Based on the available information, it was evident that many posters were from south China. Almost no posters put their age on their personal pages. However, as mentioned above, it was possible to determine their approximate age from the photographs in their posts.

Most were young or middle aged. Only five posters mentioned in their posts that they were retired and came to New Zealand with their friends. Most posters (33/50) travelled with their partner or family. Most posters' schedules showed that they came to New Zealand in November and December, which is the peak travel period in New Zealand. Furthermore, more than half of the posters noted that their travel period was 7-13 days, and 22 posters stayed in New Zealand for more than 14 days.

In terms of vehicle rental type, 14 posters selected ordinary cars such as compact cars, and 26 posters chose Sport Utility Vehicles (SUVs). Only a few posters rented Multi-Utility Vehicles (MUV) or Recreational Vehicles (RV) for their travel in New Zealand. Some posters pointed out that the SUV was the best choice for driving in New Zealand, particularly in the South Island, because the road conditions were complex there, and driving an SUV could be safer than driving an ordinary car. Most two-person groups such as honeymooners preferred compact cars, and if there were more than four travellers, they would select an SUV to drive in New Zealand.

### **4.3 Sources of information for Chinese self-drive tourists regarding traffic rules and road conditions before driving in New Zealand**

There are three major sources that Chinese self-drive tourists use to know and learn about traffic rules and road conditions before driving in New Zealand: 1) from official websites, for example the Tourism New Zealand Driving Test website; 2) from agencies such as the Zuzuche application; and 3) from vehicle rental companies, such as Hertz and Apex.

Most posters did not give details about how they learned about traffic rules and road conditions. Almost all of the posters shared their understanding of traffic rules in New Zealand, and some explained in detail their driving experiences during the trip. Therefore, they used only a few words to explain how they learned and knew about regulations and road conditions in New Zealand. However, online readers could understand traffic rules and learn about the real state of a route by reading posts on the online platforms.

#### **4.3.1 From official websites**

Most posters mentioned that they browsed New Zealand official websites to search for the information they needed. Only a few posters noted how they learned the traffic rules and what

happened when they learned rules from the website. For example, one poster mentioned the availability of a traffic test on the Tourism New Zealand website.

*The traffic rules on the official website of tourism New Zealand are only six pages long. Based on my previous experience, I finished reading them in less than 10 minutes. I wanted to do the test of 66 questions of traffic rules on the website, but I couldn't open the website, so I gave up. (1)*

As this person mentioned, the test of 66 questions of New Zealand traffic rules is from the website called “Driving tests” (<https://www.drivingtests.co.nz/roadcode/cn/all/66/>). Only two posters mentioned this website. One poster recommended new self-drive tourists do a test on traffic regulations when they prepare to self-drive in New Zealand, and that it was useful to learn and understand New Zealand traffic rules. One poster did not do this, because he could not open the website (1).

#### 4.3.2 From Zuzuche

Zuzuche was mentioned by almost all posters. Zuzuche is a car rental platform for Chinese tourists to pre-book cars for travel in overseas destinations. These posters rent cars through Zuzuche, and pointed out that they could see a detailed list of New Zealand traffic regulations on the Zuzuche website after they booked their car (2,3).

*After renting a car, Zuzuche also especially sent us the New Zealand traffic regulations and related matters needing attention (2)*

*In addition, after renting a car through Zuzuche, I received an email about the traffic rules of New Zealand from the company, which was very considerate (3)*

#### 4.3.3 From rental car companies

Most posters regarded renting a car as an important part of their trip, and they usually wrote an individual section to describe the experiences of renting their car. A few posters mentioned that when they went to the rental company, the receptionist told them about some of the traffic rules and safety matters (4).

*When picking up the car at airport, the receptionist gave us a booklet named “Driving in New Zealand” to study (4)*

*Driving in New Zealand* is a booklet issued by the New Zealand Transport Agency (see appendix 4). The main traffic rules are translated into ten languages in this booklet, which is provided to self-drive tourists in New Zealand. Therefore, some posters mentioned they were given this booklet by their rental company before they picked up the car.

Furthermore, one poster deemed that one rental car company discriminated against Chinese tourists, because the tourists could not rent a car if they did not pass the safe driving test (5).

*Some Chinese people will be asked to do a small test for safe driving before picking up their car. If you make some mistakes, you will be asked to study for several hours before taking the test again. If you make more mistakes, you cannot pick up your car. (5)*

#### **4.4 Safety problems that Chinese self-drive tourists might have when driving in New Zealand**

Some posters described bad experiences that might have caused or had caused a road accident during their self-drive tours in New Zealand. The next section describes the main themes in the findings.

##### **4.4.1 Undeveloped tourist infrastructure**

Based on the demographic data in Table 3, the South Island was the main destination for most Chinese self-drive tourists during their tour. There were three problems of infrastructure in the South Island mentioned by many posters: difficulty finding petrol stations, poor road conditions, and poor telephone signals. Although these problems did not caused serious accidents, they might be a safety risk for self-drive tourists while driving.

##### ***Difficulty finding petrol stations***

Finding a petrol station was difficult for Chinese self-drive tourists when they drive in the South Island of New Zealand. The South Island is a sparsely populated region in comparison to China, and the distance between urban areas is relatively far. One poster pointed out:

*Gas stations in the South Island of New Zealand are usually located in towns. However, in some parts of the South Island, towns are very far away from each other. (6)*

Difficulty finding petrol stations was a potential risk for Chinese self-drive tourists. One poster had an experience in which he could not find a petrol station when the fuel warning light was on, and drove for another 40 km to find a station. He said he felt very nervous and afraid on the road. If he made a mistake in estimating the remaining fuel in the car and could not find a petrol station in time, he might face unknown safety problems. Another poster mentioned a similar situation (7):

*There was a small incident here. There was still half of the fuel left when I drove on the way. Before driving into the mountains, I thought there would be a gas station in a hundred or two hundred kilometres, but there are really few gas stations in New Zealand, at least there are only two gas stations from Kaikoura to Hokitika which is nearly four hundred kilometres. So, after that, when I saw a gas station, I would consider whether to fill up then. (7)*

Therefore, some posters recommended new self-drive tourists to fill up their car wherever they saw a petrol station in the South Island of New Zealand (8).

*You don't have to wait until your car is running out of gas to fill it up. You might be at a gas station where gas is expensive. Or even more dangerous, you might not find a gas station on the road for a hundred or two hundred kilometres! (8)*

### **Poor road conditions**

In this research, poor road conditions refers to the bad road surfaces in the South Island of New Zealand. Because the topography is varied and complex in the South Island, road conditions are highly variable. The major highways such as New Zealand State Highway 1 were widely praised in posts, because of the good surface and relatively good highway equipment. However, in addition to the major highways, there are many gravel roads and winding mountain roads. The Cardrona Bra Fence was mentioned several times, because of the metal road; one poster mentioned that the metal damaged his car (9).

*Shortly before I arrived at the bra fence, a stone from the car opposite smashed into my window. (It was) a small crack though, it was not serious, but I was concerned that it might be a safety hazard. (9)*

A small South Island district called Paradise is another destination that was often mentioned in the posts due to the surrounding poor road conditions. There are many potholes on the road surface. One poster went to Paradise twice, but did not arrive at Paradise the first time. He thought he had already arrived because he saw many cars stop in front of large potholes. The second time, he rented a large vehicle, crossed the potholes, then got to Paradise. Although he was not in an accident there, he saw a minor accident which had occurred:

*On the road, I met people who were waiting for a rescue after their car overturned by a pothole, and people had given up moving forward because the pothole was too deep. (10)*

Many posters said that it was difficult to drive on the mountain roads in the South Island, because the roads were too narrow and bumpy, and the slopes were steep. One poster had a small car accident on a downhill section (11):

*When going downhill, because the road was too narrow, it was difficult to turn, and our car hit the left-side guardrail; outside the guardrail was a cliff. Fortunately, we were strictly following the speed limit and controlled the speed to 30 km/h by applying the brakes (without the brakes, we would automatically accelerate to 70 km/h on this road due to gravity), so the car did not turn over. (11)*

The third problem was that some parts of the road were being repaired. Roads under repair are a common phenomenon that many posters faced in the South Island. Road repairs brought up two matters that were those most frequently cited by posters. Firstly, the road surface might be rough, as mentioned above. One poster pointed out that he had travelled in New Zealand twice, and found that there was always a road being repaired on his route, and the result was that there were many broken stones on the road. Secondly, repairing roads causes traffic delays. More than five posters stated that they could not drive to their destination on time due to road works. One poster wrote:

*It was hard to drive near Kaikoura, because roads were being (re)built, and in some places there was only one lane left, and it was not uncommon to wait five to ten minutes to pass. And this part of the road is closed at 18:00, so be sure to pay attention to the time of your trip from Kaikoura to Christchurch. (12)*

Another poster had the same encounter:

*The road was under maintenance. I always needed to stop and wait for the car from the opposite direction to pass first (13)*

Many posters made the same point that new self-drive travellers needed to allow plenty of time when they designed their schedule, because the road conditions were difficult, meaning that there were many unpredictable events that could happen on the way.

### ***Poor telephone signals***

There was no telephone signal in many areas of New Zealand, which could directly result in self-drive travellers not being able to seek help using their mobile telephones. There were two matters that posters mentioned in relation to this. Firstly, phones' GPS could not always be used. Almost all posters wrote about GPS in their posts. If they relied on their phones' online GPS, and it did not work, this would lead to self-drive tourists' driving the wrong way. Therefore, downloading an offline map was a necessary solution that almost all posters recommended. However, offline maps could cause problems as well, because they could not be updated in a timely manner. As mentioned in the last section, road maintenance is common on the highways. One poster ran into a small problem due to using offline maps and encountering road repairs (14).

*Due to the road being repaired, the offline map was not up to date. It led us to go in the wrong direction...finally, luckily, we found another road that we could drive on normally. That's scary! (14)*

Secondly, no telephone signal meant that self-drive tourists could not ask for help on time if they had trouble on their route. Two posters had been in similar situations. When one's car had broken down on the road, they could not get help due to the poor phone signal. Finally, they turned on their emergency hazard lights, and carefully drove the cars to a place where they could get a signal and seek help. Therefore, a poor phone signal is a potential risk factor that



directly affects whether self-drive tourists drive on the right road and get help in time during their trip.

#### 4.4.2 Personal factors that impact on driving safety

Personal factors were mainly two types: 1) different driving habits, and 2) carelessness, and not paying attention. The second one was uncommon in the posts analysed but did result in small car accidents.

##### ***Different driving habits***

Chinese self-drive tourists not only need to adapt to right-hand drive cars, but also have to adapt to cars with unfamiliar layouts. The point of greatest difference is that cars in China have the windscreen wiper switch on the left and the turn indicator switch on the right, which is the opposite layout to some left-hand drive cars. Some posters said that they were always thinking about “wiper and light” and “keep left” when they drove on the road at the beginning of their trip.

In addition, indicating when turning was a problem. Two posters were forced to stop by the locals because they did not turn the lights on when they were supposed to. One poster mentioned that he did not turn on the signal lights when he wanted to change lanes, and another poster did not turn the headlights on in the early evening (15). Both mentioned the differences in driving habits between New Zealand and China, particularly the correct way to use headlights on the road. A previous study showed that some Chinese drivers did not realise the importance of using headlights properly in specific situations such as in the rain, for ensuring road safety (Zhang, Huang, Roetting, Wang, & Wei, 2006). However, using headlights correctly in New Zealand is regarded as an important aspect of operating the vehicle, and relates to traffic accident prevention.

*Driving at night we had to start the lights, (even though) night is not necessarily dark, but lights should (still) be turned on in the evening. On the fourth day, we forgot to turn on the automatic lights on the way (back) after dinner at Lake Tekapo, because there was still a bit of sunset and we didn't notice the lights were off. We were forced to stop by two local ladies, and they reminded us that the lights were off. (15)*

Although these were not major safety problems, the posts reflected the fact that Chinese people and New Zealanders have different driving habits. It was a potential risk that could have resulted in the Chinese self-drive tourists making a mistake when they were driving on the New Zealand roads.

### ***Not paying attention to road information***

Three posters wrote that they had encountered safety problems because they did not pay attention to road information. Two posters had similar situations in which they did not pay sufficient attention to the road. One poster pointed out that his driving behaviours were dangerous because he felt tired (16).

*At noon, I felt a little sleepy and anxious. I wanted to hurry up. I tried to overtake another car on a curve when we were halfway to our destination. My wife said it was too dangerous to do so. The car behind also honked the horn. (16)*

The second post described another situation (17):

*He pulled over in a hurry to go to the toilet, and then something happened — we crashed into other cars that had stopped in the parking area... because of the parking, he was too close to that car, so he crashed into the mirror that was on the left side, then the mirror fell off... . (17)*

These two incidents are similar in that the drivers were in a hurry to do something, so they forgot to pay enough attention to the surrounding road situation and drive carefully, even though they did not cause serious accidents. However, the third poster's car accident occurred because of his carelessness. Due to the sunlight, he did not check the left side at a crossroad, and was hit by a car coming from that side. Although he was irresponsible in this accident, he said he could have avoided it if he had checked the road information carefully at the crossroad.

Two posters were stopped by police on the road, because they did not follow the speed limit. One poster was over-cautious and did not realise that he was driving too slowly, which caused congestion. The local drivers behind him called the police, and the police stopped him and gave him a ticket (i.e. for a driving offence). Another poster followed the rule that allows driving at 100 km/h on the highway but did not see the road sign showing that the limit had changed to

80 km/h on his road. Therefore, he was followed by a police car, and was stopped and given a speeding ticket by the police officer.

#### 4.4.3 Extreme weather

The weather in New Zealand was frequently mentioned in posts, because it is variable and complex. Many posts described the weather as a key element that could impact on tourists' travel plans in the South Island, particularly in winter. According to the demographic information, most of the self-drive posters travelled to New Zealand in spring and summer. In these two seasons, the weather is relatively fine. However, in winter, there are frequently closed roads in the south because of heavy snow. Two posters mentioned in their posts that they had to change their routes and schedules due to bad weather.

Rain is another problem that affects road safety. In New Zealand, the weather is changeable, and there is a lot of rain from time to time. As mentioned, road conditions are bad and variable in some places, and rain can make the road conditions worse. For example, there were more puddles on the road after rain, which made it more difficult for tourists to drive. In the posts, the two words, “slippery” and “muddy” were often used to describe the roads on rainy days. Some posters said they had never seen heavy rain in China like that in New Zealand. One of them write that “driving in the rain in New Zealand is like the scenes of a horror movie”. One poster shared the story of an accident that he saw in the rain (18):

*When we drove back to Christchurch, there was a sharp bend in the road. It was raining, and the road was slippery. The third car in front of us skidded, and hit the front of the mountain wall on the right, and fell into the road bed on the right. All the cars stopped... (18)*

This shows that extreme weather was a safety problem for Chinese self-drive tourists when they drove on bad road surfaces.

#### 4.4.4 Poor car condition

“Poor car condition” mainly refers to two situations: 1) renting an inappropriate car; and 2) renting a vehicle with problems.

### ***Renting an inappropriate car***

As mentioned, there are difficult road conditions in the South Island. One poster rented a hatchback. However, he found it was very difficult to drive a vehicle with low horse power on the Cardrona Valley Road in the South Island, because of the mountainous terrain (19). Therefore, he recommended to drive an SUV if travelling in the South Island in New Zealand. Another poster changed his original car to an SUV for the same reason.

*Driving on the Cardrona Valley Road was very difficult, because there were many curves on the mountain, there were many cars on the road, and the mountain was high. Compared with SUV, my car was underpowered, and the speed of the car was slow on the road... because there was only one lane, slow speeds would result in traffic jams on this road... (19)*

### ***Renting a vehicle with problems***

The quality of a rental vehicle is the most important thing for self-drive travelling. Three problems were found in the posts: warning light flashes, flat or burst tyres, and dead car battery. These problems were not predictable, but they affected tourists' safety on the road.

*When we drove back from Milford Sound, the tyre blew out. However, we failed to change the tyre. Then, the locals helped us call an emergency (i.e. rescue) car to tow our car away to a nearby city (the signal was poor on this road). (20)*

## **4.5 How Chinese tourists get help when they encounter problems during self-drive tours in New Zealand**

No serious accidents were reported in these posts. Most posters observed New Zealand traffic regulations, and drove with great care. Undeveloped tourist infrastructures and extreme weather influenced tourists' driving experiences, which caused sudden accidents in some situations. Furthermore, some personal factors such as different driving habits and carelessness could lead to accidents. When safety problems arose, the relevant organisation (i.e. rental car company) and local people always offered help.

#### 4.5.1 The relevant organisation

The “relevant organisation” mainly refers to Zuzuche and rental companies. Most posters did not initiate contact with the customer service staff of Zuzuche and rental companies when they encountered safety issues on the road. Only a few people had accidents that needed the police to assist.

Zuzuche was the most frequently appearing organisation in the posts. Section 4.3.2 introduced Zuzuche. Chinese tourists could pre-book vehicles through Zuzuche before their flight to an overseas destination. Then, when they arrived at the destination, they could go directly to the rental company to pick up their car. For these self-drive tourists, there were two reasons to explain why they chose Zuzuche. Firstly, it was convenient for them to pre-book their rental car. Secondly, Zuzuche provided 24-hour online service in Chinese language to tourists, which is why the posters also asked for help from Zuzuche when they got into trouble on the road. The language barrier is a key problem that results in tourists not being able to directly ask for help from local organisations (e.g. police and rental companies) for help. One poster shared her experiences (21):

*When we drove in the North Island, the left-side mirror was broken... because of the language barrier we couldn't report it to the rental company, so we contacted Zuzuche 24-hour customer service in Chinese, and asked for help through Zuzuche, to inform my rental car company of this problem, which solved the problem in time*  
(21)

In other posts, the posters offered the same suggestion of “asking Zuzuche for help if anything goes wrong on the road”. Therefore, for most posters, Zuzuche was the first organisation they thought of when they encountered problems. A few posters with better English preferred to communicate directly with their rental company if their car broke down (22).

*I thought I should call the rental company first. It was the first time I described the car's condition in English; anyway, I thought I explained it clearly in English to my rental company. I was told to send a picture of the alarm light to the company's email address, while waiting for them to confirm the problem.* (22)

Asking a rental company for help if the vehicle had a problem, in fact, was the more convenient and fastest way to get assistance. Zuzuche played a translating role between tourists and the rental companies. Some posters pointed out that if any staff spoke Chinese at their rental company, they would feel that was lucky and convenient, even if the posters could speak English. As mentioned earlier, one poster had an accident with a car on his left hitting his car at a crossroad. This poster contacted his rental company and felt lucky when the staff member who served him could speak Chinese. Because of the Chinese drivers' language barrier, Zuzuche has become the main source of help for tourists. In other words, language skills determined where tourists could ask for help when they encountered problems during self-drive tours in New Zealand.

#### 4.5.2 The local people

Many posters mentioned the local people in the posts, and gave the New Zealanders high praise, because they were enthusiastic and friendly. The local people always came and offered their help when tourists seemed to need it. One poster shared his experience (23):

*I had a flat tyre. I know how to change it, but I was not very skilled. A group of young New Zealand girls saw I was changing a flat tyre. I was a little slow. Without saying a word, they came to help me to remove the wheel and jack the car up. (23)*

Asking local people to give a jump start when the car battery was flat and asking for help with filling up with fuel (some posters did not know how to self-serve at a petrol station) were mentioned several times. For tourists, a friendly local community could improve their driving experiences.

#### 4.6 Summary

This chapter mainly focused on presents the results in relation to the three research questions. The findings show that most self-drive tourists were very careful about driving in New Zealand. Most safety problems were due to external reasons: tourist infrastructures, car condition, and bad weather. Only a few people had relatively serious safety problems due to internal (personal) factors such as different driving habits and carelessness. When they got into trouble on the road, the relevant organisations and local people always offered timely help to them. The next

chapter discusses these findings in relation to the existing literature, and provides some recommendations to Chinese self-drive tourists and local organisations.

## **5. Discussion**

### **5.1 Introduction**

This chapter is divided into three sections. The first reviews the research. The second section summarises the demographic characteristics of Chinese self-drive tourists in New Zealand, and discusses the key findings, combining the key findings of the research with those in previous studies. Finally, the chapter makes recommendations, based on the results, to Chinese self-drive tourists, the tourism industry and relevant organisations, in order to improve the personal safety of Chinese self-drive tourists and the locals, and reduce the hidden obstacles to road safety.

### **5.2 Reviewing the research**

Online travel information such as published travel notes have received more and more attention from independent Chinese outbound tourists (Xiang, 2013). Travel notes are real traveling experiences posted by travellers on online platforms, which are more likely to be accepted by readers (Xiang, 2013). In this research project, 50 posts from Qyer.com and Mafengwo.cn were examined. The aim was to explore the attitudes of Chinese self-drive tourists to driving safety in New Zealand. Three research objectives were established to explain the research aim in detail: 1.) to determine how Chinese tourists know about traffic regulations and road conditions before driving in New Zealand; 2.) to determine what safety problems Chinese self-drive tourists might face when driving in New Zealand; 3.) to determine where Chinese tourists ask for help when they encounter problems during self-drive tours in New Zealand. To achieve these research objectives, netnography was applied to collect and analyse the data. The research data were collected from two well-known online Chinese tourism forums.

### **5.3 Demographic characteristics of Chinese self-drive tourists in New Zealand**

The demographic information in this study reflects four characteristics of Chinese self-drive tourists. Firstly, some Chinese female posters who had New Zealand self-drive tour experiences prefer to record and share their experiences during the trip even if they were not the main persons to drive the car. Most of the female posters may have travelled with partners



while travelling in New Zealand. Taking family tours and honeymoon tours were the main purposes identified in the research samples. Some female posters played the role of observer rather than driver during the self-drive trip. They did not experience driving in New Zealand, but participated in preparations for their overseas self-drive tour, such as learning New Zealand rules, and sharing all the on-road experiences such as having an accident. They recorded the travelling experiences and shared them on online platforms. Secondly, most Chinese self-drive tourists who travelled in New Zealand had overseas travelling experience, and many of them were from the south of China. These tourist characteristics were the same as those identified in previous studies: coming from the south of China (coastal cities) (Xiang, 2013), and having overseas travelling experience (Wu, 2015). Thirdly, the Chinese public holidays were not considered by Chinese self-drive tourists for travel in New Zealand. According to previous studies, public holidays such as Chinese New Year and Chinese National day were the most popular travel times in China (Wang, Fang, & Du, 2011), which was not the same as shown in this research. Most posters' schedules showed that they came to New Zealand in November and December, which is the peak travel period in New Zealand. Self-drive tourists chose a warm season to visit New Zealand. Consequently, New Zealand is a good choice for Chinese tourists to escape their winter. Fourthly, SUV is the main vehicle type for Chinese self-drive tourists to rent in New Zealand. The South Island is the main destination for Chinese self-drive tourists. However, the road conditions are complex and the weather is changeable in the South Island. An SUV is more appropriate to drive in the South Island, because the size of vehicle is larger, and the performance is better than a standard car, which made it safer and more convenient for tourists on the road.

#### **5.4 The main reasons for Chinese self-drive tourists to encounter safety problems on the road**

The reasons for road safety problems for Chinese self-drive tourists drive in New Zealand could be classified as internal reasons and external reasons. Internal reasons are personal reasons, including different driving habits, and carelessness about road information. External reasons mainly refer to undeveloped tourist infrastructures, extreme weather, and poor car condition. The external reasons could not be controlled and might be emergencies that tourists encounter on the road, such as a flat tyre. Although they could not be controlled, the tourists could prepare and check in advance. Because this research is focused on the Chinese self-drive tourists'

driving experience in New Zealand, the topic is unique. Therefore, many findings in this research are new and were not evident in other research.

#### 5.4.1 External reasons

##### *Undeveloped tourist infrastructure*

Undeveloped tourist infrastructures included difficulties finding petrol stations, poor road conditions and poor telephone signals. These three problems commonly occurred in the South Island of New Zealand and were mentioned many times by participants in this research. This finding is unique, because there are no similar results in any prior studies.

The South Island of New Zealand is a popular destination for self-drive tourism and is dominated by the Southern Alps. There is complex terrain, and most roads are in the mountains. Furthermore, compared to the North Island, economic development in the South Island is relatively weak, and the population is small. On the one hand, poor development and a small population can reduce human impacts on the environment in the South Island, so the area is able to maintain its original natural scenery. On the other hand, it means there is a lack of capital and manpower to construct and manage infrastructures and facilities such as petrol stations and roads. In addition, the complex terrain can cause difficulties in developing infrastructure, especially roads. Therefore, the undeveloped infrastructures are inconvenient and unsafe for tourists and locals in their daily life.

The New Zealand Government has begun to pay attention to this problem, particularly the poor telephone signal. In 2018, the Government stated that it would spend NZD130 million to improve broadband and extend mobile coverage, and specifically pointed out Mobile Black Spot Fund (MBSF), a programme aiming to provide greater mobile coverage on state highways and in tourism areas to improve public safety and tourists' driving experiences on the road (Ministry of Business, Innovation & Employment, 2019). However, the results of this research show that poor phone signals are still a problem impacting Chinese self-drive tourists' experiences on the road. Not only could they not use online GPS, but they could not call for help in time because there was no phone signal, which is a potential safety risk for tourists on the road.

Although there is no research with similar findings, Australian researcher Olsen (2013) has pointed out the concept of tourism-theme routes. Developing a tourism-theme route requires

government and relevant tourism developers to participate in planning, constructing and managing infrastructural facilities (Olsen, 2003). On the one hand, the tourism-theme route can be designed to link to many areas. Tourists who drive on this route will pass through many scenic areas. On the other hand, the infrastructural facilities would be complete, and the tourist resources would be allocated reasonably, to enhance tourists' driving experiences and personal safety. The Queensland Government issued a document concerning a drive tourism strategy, which mentions the construction of theme routes. This document shows that the Government has a clear vision about infrastructural facilities such as road quality, signage, roadside infrastructure, etc, to enhance self-drive tourists' driving experiences and ensure personal safety on the way (Queensland Government, 2012). For the New Zealand Government, it is a good reference point for re-planning current popular tourist routes.

### ***Extreme weather***

In this research, extreme weather mainly refers to heavy snow and rain that caused the Chinese self-drive tourists to encounter minor safety problems on the road. Due to the geographic location and complex terrain, the weather in New Zealand is changeable. Firstly, New Zealand is in the Pacific Ocean, surrounded by sea in all directions, so it has a maritime climate; most areas are located in the temperate zone. Therefore, precipitation occurs all year, but particularly in the winter. However, in the South Island, heavy snow and frost are more common than is rain (NIWA, 2019). Therefore, for self-drive tourists, the summer seems to be more suitable for driving in New Zealand. Secondly, the mountains in the South Island play an important role that affects the amount of precipitation in different regions (NIWA, 2019). The region to the west of the mountains is wet, with heavy rainfall. In the east of the mountains, the precipitation is less, and the air is relatively dry (NIWA, 2019).

In New Zealand, the tourism industry is closely affected by the weather, because there are many tourist activities and scenic spots where specific weather conditions are required (Becken & Wilson, 2013), such as for parachuting. For self-drive tourists, the weather is a factor that may require them to re-plan routes during their trip (Becken & Wilson, 2007). For Chinese self-drive tourists, the weather is one of the safety factors with which they are concerned. Experiencing extreme weather such as heavy rain on the road might lead to visibility being decreased and the road becoming wet and slippery, which increases the risk to the personal safety of self-drive tourists on the road (Andrey, Mills, & Vandermolen, 2001). Furthermore, in the South Island, some roads are closed in the winter because of snow, which is inconvenient

for tourists. Therefore, self-drive tourists have to change routes or plans to ensure road safety if they encounter bad weather.

Weather is an important element that influences tourists' satisfaction with travel experiences in New Zealand (Becken & Wilson, 2013). However, most tourists in this study were not concerned about checking the weather during their trip. According to Becken and Wilson's (2013) research, only a few tourists search regularly for weather information during their trip in New Zealand, and few paid attention to the weather forecast; some did not check the weather at all. In extreme weather, the road surfaces become wet and slippery, and some roads might be closed, particular on snowy days. Checking weather information in time could help Chinese self-drive tourists to adjust and re-plan routes in time, avoiding danger on the road or driving on the wrong roads.

The current booklet, *Driving in New Zealand*, only mentions driving in the winter (on snow and ice), and does not mention driving in the summer or in heavy rain. Most Chinese self-drive tourists did not drive in the winter because they travelled to New Zealand in summer, which means heavy rain or other extreme weather in summer would be a potential road safety problem for them. Summer is the peak tourism season in New Zealand. For the government and related tourism suppliers, there is a need to focus on the influence of the weather in summer on self-drive tourists, urge tourists to check weather information in time, and teach self-drive tourists how to operate vehicles in rain, so as to avoid accidents.

### ***Poor car condition***

In this research project, "poor car condition" mainly refers to two situations: 1) renting an inappropriate car; and 2) renting a vehicle with problems. This finding is unique. So far, there has been no research about the type of vehicle that tourists select to drive, and why they select a vehicle, and how the vehicle affects the self-drive tourists' driving experience. In this research, more than half the Chinese self-drive tourists selected a Sports Utility Vehicle (SUV), and 30% chose a standard car. In this research project, it was found from the tourists' posts that most Chinese tourists mainly think about the number of people and the price of the vehicle when they rent the vehicle. Compared with a basic vehicle, the SUV has better performance. Firstly, the interior space of an SUV is bigger, which means it has a high comfort factor, and provides more space for tourists to stow their luggage. Secondly, off-road performance is better than that of a basic vehicle. An SUV's engine can generate enough horsepower to drive on mountain

roads. The distance between the chassis of an SUV and the ground is higher than that of a basic vehicle, and the grip is better, which makes it suitable for driving on gravel roads. As mentioned before, there are many gravel roads and mountain roads in the South Island. Therefore, renting an SUV is safer than renting a basic vehicle. However, the price of renting an SUV is generally higher than that of a basic vehicle. For two persons, renting a basic vehicle seems to be more appropriate, because they would not need much interior space. Nevertheless, the participants who rented basic vehicles underestimated the terrain and road conditions in the South Island. High mountains, unsealed roads, and changeable weather can make driving difficult in the South Island.

In China, most people prefer to obtain relevant tourism information from the internet (Xiang, 2013). For most Chinese self-drive tourists in this study, it was the first time driving in New Zealand. Before they came to New Zealand, they looked for tourism information on websites. On most Chinese tourism websites, detailed descriptions of road conditions in New Zealand can be found. However, it was difficult for self-drive tourists to associate the road conditions and vehicle types. They failed to realise that the appropriate vehicle type is an important factor in driving safety. When they selected their vehicles, some preferred to consider the immediate problem of money. Therefore, the relevant organisations and tourism suppliers such as rental companies should provide suggestions about renting cars suitable for the tourists' routes.

Furthermore, a broken-down vehicle was another problem for Chinese self-drive tourists; the most common reasons were dead batteries and flat tyres. In most situations, vehicle break-downs were unforeseeable. For example, one poster found that a warning light suddenly started flashing without any apparent reason when he was driving. A few cases of break-downs were due to improper operation, such as hitting the edge of road and causing a tyre to burst. Therefore, to reduce this type of incident, rental companies and self-drive tourists should define the limits of their responsibility for the vehicle. Rental companies should check the vehicle before providing it to customers, ensuring it is in good condition. Tourists should check the vehicle again before the journey start, and make sure that they can operate the car correctly on the road.

#### 5.4.2 Internal (personal) factors

For Chinese self-drive tourists, some incidents occurred due to their own actions. There were two reasons mentioned several times: different driving habits, and carelessness about road conditions.

A driving habit is a part of a driving style, which is reflected in a country's traffic culture (Özkan, Lajunen, Chliaoutakis, Parker, & Summala, 2006). Firstly, the structure of vehicles is different in New Zealand. The steering wheels in vehicles in China are on the left, which is the opposite to cars in New Zealand. Furthermore, the switches for lights and wipers are also the opposite way around. It was challenging for Chinese self-drive tourists driving for the first time in right-hand drive vehicles. In this research project, many posters mentioned this situation in their posts. Although this new driving mode did not cause any accidents, it was a potential safety risk. Due to unfamiliarity with the operation of the vehicle, some tourists paid more attention to operating the vehicle than to road information in the beginning. In some special situations such as roundabouts and crossroads, drivers need to observe the road, and receive a lot of complex road information to make correct driving judgements (Han, Singh, & Zhao, 2010). Unfamiliar roads, unfamiliar traffic rules and road signs in a foreign language delay Chinese tourists' ability to receive and deal with road information (Han, Singh, & Zhao, 2010; Wu, 2015). However, unfamiliarity with the operation of the vehicle makes this situation more serious, which could make Chinese self-drive tourists neglect important road information and cause a traffic problem. Furthermore, unfamiliarity with the operation of the vehicle would make some Chinese self-drive tourists lack confidence in driving in New Zealand. Some posters mentioned they felt frantic and nervous when they needed to turn on the headlights or wipers in some situations. In this research, confidence was an indirect factor that affected Chinese self-drive tourists who drove in New Zealand, and made tourists drive overcautiously, so they inadvertently reduced the traffic speed and caused a traffic jam.

Secondly, traffic cultures in New Zealand and China are different. One poster was stopped by locals because she did not turn on the headlights in the evening, because there was still a little sunlight in the sky. In the Chinese driving culture, drivers prefer to trust their judgement to decide about using headlights on the road rather than on theoretical knowledge (Zhang, Huang, Roetting, Wang, & Wei, 2006). The New Zealand traffic rules clearly require drivers to turn the headlights on in two situations (NZ Transport Agency, 2019):

- 1) from 30 minutes after sunset on one day, until 30 minutes before sunrise on the next day; and*
- 2) at any other time when you can't clearly see a person or vehicle 100 metres away.*

Chinese traffic rules are more complex and detailed about using headlights in different situations, such as needing to turn headlights on when there is fog, and needing to interchangeably use high and low beam when crossing an intersection if there is no streetlight or signal light at night-time. Compared with the traffic rules in China, the New Zealand rules are easier to remember, that is, they are easier for drivers to follow. However, the booklet, *Driving in New Zealand*, does not mention the rules for using headlights. In this research, the result show that the rules for using headlights are an important matter for Chinese self-drive tourists to remember during their trip.

The results show that Chinese self-drive tourists lacked awareness of road safety to some extent. In this research, this mainly appeared in three situations. Firstly, some posters paid too much attention to other information rather than road information while driving. Previous studies have shown that some car accidents occur because of tourists' focus on roadside scenery (Heggie & Heggie, 2004). Although the cases in this research are different from those in previous studies, they have a common point in that self-drive tourists paid a lot of attention to other objects rather than road information, thus causing incidents or accidents. Drivers are expected to pay attention to traffic information, particularly as international drivers (Han, Singh, & Zhao, 2010). An international driver not only needs to receive road information in a foreign language, but also needs to spend time translating the road information so as to correctly deal with the information in the shortest time (Choocharukul & Sriroongvikrai, 2017). However, over-focus on other information distracts attention from road safety, which means that international tourists do not have enough response time to receive and deal with road information. This is a dangerous problem on the road.

Secondly, overconfidence in driving in New Zealand was also an important factor. As mentioned, some posters felt a lack of confidence while driving in New Zealand at the beginning of the tour due to their unfamiliarity with the operation of the vehicle, unfamiliar roads, and unfamiliar traffic rules. After several days of driving, most Chinese self-drive tourists thought driving in New Zealand was simpler than driving in China. There were two reasons: 1) there were fewer cars and people on the road everywhere except in the cities; and 2) most New Zealand drivers obey the traffic rules. This helped Chinese self-drive tourists develop confidence when driving in New Zealand. However, a few Chinese self-drive tourists showed over-confidence when driving in New Zealand. Over-confidence is one of the characteristics of the Chinese driving culture (Zhang, Huang, Roetting, Wang, & Wei, 2006).

In general, accidents due to a driver's over-confidence will happen on familiar roads, because they neglect traffic rules and road information on familiar roads and exhibit dangerous driving behaviours (Huang, Ruscio, Ariansyah, Yi, & Bordegoni, 2017). In this research project, the accidents due to over-confidence happened on roads familiar to tourists, such as the road near their accommodation, and other roads they had already driven on.

The third risk factor is that drivers failed to see road signals and road information. This situation normally occurred when Chinese self-drive tourists exceeded the speed limit on a particular road. There were two reasons for this situation. One was that the traffic sign was in an inconspicuous place on the road, and another was that Chinese self-drive tourists paid so much attention to other information on the road that they were likely to neglect traffic signs. To deal with the first problem, the New Zealand transport authority should improve traffic facilities, to ensure the traffic signs are in obvious areas on the road and Chinese self-drive tourists should be educated to be responsible for following traffic signs while driving in New Zealand.

## **5.5 Language barrier affects decision-making for self-drive tourists**

In this study, language was the principal factor that affected most Chinese self-drive tourists' decision-making on the road, including selecting rental companies and other organisations to ask for help. Zuzuche, as mentioned in the findings chapter, is a car rental platform for Chinese tourists to pre-book cars for overseas destinations. On the Zuzuche website, tourists can find Chinese information on all the rental companies in New Zealand, including vehicle types, conditions, and prices. Zuzuche not only provides a pre-booking service to Chinese self-drive tourists, but also provides translation services to tourists, and acts as an agency to help tourists communicate with rental companies to solve vehicle-related problems. Therefore, many posters recommended online readers to pre-book vehicles through Zuzuche before they come to New Zealand, so that they can take advantage of the translation services. Furthermore, this research shows that many Chinese self-drive tourists preferred to select a rental company that offers customer services in the Chinese language, so that it was easy to communicate. Language was one of the factors that affected tourists in their selection of rental companies.

For Chinese self-drive tourists, although asking for help from Zuzuche made it easier to communicate, the process of solving problems became more complex, which meant Chinese self-drive tourists needed to wait longer to get help in Chinese if they encountered serious problems. Connecting directly to local organisations or rental companies would provide help



more quickly than going through Zuzuche. Some Chinese self-drive tourists mentioned that they did not know how to explain the reasons for their accidents in English, which made it difficult when communicating with the local police or rental companies. Therefore, they asked Zuzuche for help communicating with locals to solve problems on the road.

In previous studies, most research focused on how the language barrier impacts non-English self-drive tourists while driving in overseas destinations. However, there is no research about how the language barrier impacts non-English self-drive tourists' efficiency in solving problems related to road safety and how to remove language barriers between non-English tourists and the local tourism suppliers or institutions such as police stations. However, according to this research, Chinese self-drive tourists did not face any problems caused by language barriers on the road. They chose Zuzuche or rental companies with Mandarin speakers because they hoped to be able to ask for help without language barriers.

Many rental companies and related organisations have started recruiting employees who can speak Mandarin or encouraging staff to learn Mandarin to solve communication problems with Chinese tourists. For example, Auckland police officers have started to be encouraged to learn Mandarin, so as to better offer help to Chinese people. For rental companies, removing language barriers for Chinese tourists could attract more Chinese customers, which would enhance their competitiveness. However, the South Island is the main destination for Chinese self-drive tourists. Therefore, removing language barriers there to encourage Chinese self-drive tourists to contact local rental companies and organisations directly for help is urgently required.

## **5.6 Suggestions to the government, rental companies, and Chinese self-drive tourists**

The government, rental companies and Chinese self-drive tourists play different roles in drive tourism in New Zealand, and each has its own responsibility for road safety. Based on the discussion of the research results, the following recommendations are proposed.

### 5.6.1 The New Zealand Government

According to the foregoing discussion, the New Zealand Government needs to improve the contents of the booklet *Driving in New Zealand*. Learning traffic rules is the first step for Chinese self-drive tourists to drive in New Zealand. Therefore, the contents of the booklet should be complete, and need to consider the differences in driving habits between New Zealand and China, and the seasons that Chinese self-drive tourists would arrive in. At the time of writing, the booklet was only six pages long, and the contents covered only basic traffic rules. One poster compared New Zealand and Australia and pointed out that Australia provides a Chinese version of the traffic rules document, which is several pages long and needs much time to understand and learn, but New Zealand's is only six pages. This research project found that the content of the booklet is inadequate; two points should be added to the booklet. The first is about how to drive in extreme weather, such as heavy rain, because most Chinese self-drive tourists travel in New Zealand in summer. The other is to clarify when headlights need to be used in New Zealand. The rules for using headlights are different in New Zealand and China. Therefore, the Government should remind Chinese tourists of this point.

The findings suggest that the infrastructural facilities in New Zealand should be upgraded on popular routes in the South Island. As indicated by the posters, undeveloped tourism infrastructure was one of the factors that caused Chinese self-drive tourists to encounter safety problems on the road. Therefore, improving infrastructural facilities to improve road safety is important, which is the one of the responsibilities of the New Zealand Government. Improving infrastructural facilities is not only needed for self-drive tourists, but also for the local people.

### 5.6.2 The rental companies

The main responsibilities of rental companies were to provide a vehicle and vehicle-related services to Chinese self-drive tourists. Some posters in this research mentioned that some rental companies provided a complimentary shuttle service when they arrived New Zealand, and they were sent to the rental company to pick up the car directly. Therefore, the rental company is the first organisation that some Chinese self-drive tourists encounter to meet local people, and could provide some useful information about road conditions and road safety, which could help tourists to better understand traffic rules in New Zealand. As tourism suppliers, rental companies have a responsibility to ensure that self-drive tourists can drive safely, and to offer timely help to customers on the road. The following suggestions are for the rental companies.

### ***1. Rental companies should provide appropriate vehicles***

For many Chinese self-drive tourists, it is their first time driving in New Zealand. Although they probably have found basic information about road conditions in New Zealand on the internet, they do not know the true situation in New Zealand. Therefore, rental companies should know the tourists' main routes or destinations, provide general information about the roads, and help them select an appropriate vehicle before they pick up their car, even if the tourists have already pre-booked a vehicle. On one hand, this could ensure tourists have a good driving experience on the road; on the other hand, rental companies could more easily know the location of tourists when they ask for help on the road, so they can provide a road rescue service in time.

### ***2. Rental companies should check vehicles before they are collected***

The findings show that some Chinese self-drive tourists encountered vehicle failures on the road. Although most failures were caused by improper operation of the vehicle, some tourists had vehicles with a pre-existing problem, such as a dead battery. For a rental company, the vehicle is the main product they provide to customers. To ensure the products are in good condition is a responsibility for rental companies, not only to ensure the safety of customers, but also to maintain their image and reputation within the industry.

### ***3. Rental companies should provide road safety education to customers***

In New Zealand, renting a vehicle is simple for overseas tourists. The tourists only need to provide an original driving licence, a translated copy, and a credit card to the reception of rental companies to go through the procedures of renting, and collecting their car. Most rental companies provide only a booklet about the vehicle, cautions regarding the vehicle, and simple traffic rules. One poster described the process of renting vehicle in New Zealand as “incredibly simple”. Almost all Chinese self-drive tourists who had rented vehicles in New Zealand said that renting cars in New Zealand is simple and convenient.

However, as mentioned in findings, one poster pointed out that a rental company was discriminatory towards Chinese tourists, because the staff asked them to pass a traffic rules quiz before picking up the car. Because many people have shared their experiences of renting cars in New Zealand on the online platforms, the process of renting is known by new tourists who prepare to drive in New Zealand. If these tourists are not treated the same as previous tourists were, they may think they are being discriminated against rather than that a problem is

being addressed. Therefore, to change the idea that “renting cars is easy in New Zealand”, a step should be added, which is providing road safety education to every self-drive tourist. This step is necessary and important. Furthermore, road safety is a common problem, relating to all locals and international tourists. Providing education and training in road safety to customers could improve their awareness of safety to some extent, and allow them better understand New Zealand traffic rules.

#### ***4. Offer multi-lingual (Chinese) services to tourists when possible***

For rental companies, offering multi-lingual (including Mandarin) services to tourists is not only an effective means to compete within the industry, but also enables them to provide better service and offer help to tourists on the road.

### **5.6.3 Chinese self-drive tourists**

Although the results of this research have shown that many accidents occurred because of external reasons such as poor infrastructure and extreme weather, there were accidents that could have been avoided if the Chinese self-drive tourists had prepared for their journey. Some suggestions are therefore recommended for Chinese self-drive tourists.

#### ***5. Locate petrol stations and rest stops when planning the routes***

Chinese self-drive tourists should know the location of facilities such as petrol stations and rest stops in advance when designing routes, to avoid the fatigue of driving off the route to find a petrol station .

#### ***6. Check weather information before the journey***

The weather in New Zealand is changeable. Therefore, checking the weather information every day is important for Chinese self-drive tourists so they can adjust the routes or schedule in time, to avoid bad weather.

#### ***7. Select a vehicle that is relatively new and in good condition, and check it carefully before leaving***

In general, a new car has few problems. Selecting a relatively new vehicle might avoid vehicle problems on the road. Furthermore, checking the condition of a vehicle when collecting it is

important as well. Tourists can change their pre-selected vehicle before they leave rental company if they find that it has problems or is not suitable.

#### **8. *Consult local people on traffic rules***

For Chinese self-drive tourists with good English, consulting the local people on traffic rules could help them to better understand New Zealand traffic regulations and New Zealand driving habits. Furthermore, local people might offer some useful information to them, which could be used on the road.

#### **9. *Practise driving before the journey***

Because driving habits are different between New Zealand and China, Chinese self-drive tourists should spend some time adapting to driving in New Zealand. Chinese self-drive tourists could find a road that has fewer vehicles on it, in order to become familiar with the operation of vehicle, practise driving, and understand New Zealand traffic rules.

#### **10. *Be careful and cautious when driving at all times***

Due to the complex road conditions in New Zealand, Chinese self-drive tourists should always be careful and cautious while driving on the roads and take responsibility for personal safety. Chinese self-drive tourists should take care to observe road information constantly, to ensure they drive safely.

### **5.7 Summary**

This research has indicated that the main reasons for Chinese self-drive tourists to encounter safety problems on the road can be divided into two categories: external reasons and internal reasons. External reasons include undeveloped tourist infrastructures, extreme weather, and poor car condition; internal reasons mainly refer to accidents caused by Chinese self-drive tourists, due to issues such as carelessness regarding road information.

After analysing and discussing the reasons for problems, it is evident that the New Zealand Government (and related institutions), rental companies, and Chinese self-drive tourists have different responsibilities for road safety. Firstly, the Government should create a safe road environment for locals and self-drive tourists. In the current situation, undeveloped tourist infrastructures not only bring potential safety risks to self-drive tourists, but also create

difficulties for tourists asking for help. Secondly, the main responsibilities of rental companies are to provide vehicles in good condition to tourists, and provide road safety education to ensure they can drive safely on the road. Thirdly, Chinese self-drive tourists should take responsibility for their own personal safety on the road. They should make adequate preparations for driving in New Zealand, and be careful and cautious when driving. To improve road safety in New Zealand, requires the joint effort of the Government (and related institutions), rental companies, and Chinese self-drive tourists to take action to correct the existing problems.

## **6. Conclusion**

### **6.1 Introduction**

This chapter has three sections. Firstly, it summarises the key findings of this research, and briefly outlines the conclusions drawn from the results. Then it discusses the significance of the findings, and finally, it discusses the limitations of the research, and provides some suggestions for future research.

### **6.2 Highlights of the research**

To explore the attitude of Chinese self-drive tourists towards driving safety in New Zealand, this research collected information about Chinese self-drive tourists' actual driving experiences in New Zealand from two Chinese tourism online platforms. The research asked questions relating to what Chinese tourists know about traffic regulations and road conditions before driving in New Zealand, what safety problems Chinese self-drive tourists might face when driving in New Zealand, and where they seek help when they encounter problems on their self-drive tours in New Zealand. The research selected 50 online posts, analysed the information using thematic analysis, and presented the results as follows.

Firstly, the internet is the main channel where Chinese self-drive tourists learn and know about New Zealand traffic regulations and road conditions before they drive in New Zealand; official websites (e.g. Tourism New Zealand website) and Zuzuche are the major websites that help Chinese self-drive tourists to find out New Zealand traffic rules.

Secondly, the safety problems that Chinese self-drive tourists encountered on the road can be divided into two types: external reasons and personal reasons. External reasons include undeveloped tourist infrastructure, extreme weather, and poor car condition. Undeveloped tourist infrastructure mainly refers to difficulties finding petrol stations, poor road conditions and poor mobile telephone signals. These reasons directly or indirectly caused safety problems to Chinese self-drive tourists. "Personal reasons" means that the safety problem occurred due to the self-drive tourists' own driving behaviours, which included different driving habits and carelessness about road information. Through closer analysis and discussion, these reasons reflect some issues that need to be addressed by the Government, related tourism suppliers, and Chinese self-drive tourists themselves. Firstly, the Government did not create a safe driving

environment for self-drive tourists, and the current information about road safety such as driving in extreme weather conditions provided by officials, was not sufficiently comprehensive for Chinese self-drive tourists. Secondly, the safety-related services and safety education provided to Chinese self-drive tourists by some tourism suppliers (e.g. rental companies) were not sufficient. Thirdly, some Chinese self-drive tourists lacked safety awareness, and did not prepare well enough to start driving on New Zealand roads.

Thirdly, language was found to be a major element affecting Chinese self-drive tourists in choosing the organisation that they went to for help. This research project found that most Chinese self-drive tourists preferred to choose the rental company Zuzuche when asking for help when they had safety problems on the road. Only a few tourists who could speak English well asked the locals or local organisations for help. Some Chinese self-drive tourists could not use English to communicate with the locals for seeking help due to the language barrier. Therefore, they asked for help through Zuzuche. Zuzuche provided a 24-hour translation service, and helped its clients contact and communicate with local organisations to deal with the problems that Chinese self-drive tourists met on the road.

To improve road safety, Chinese self-drive tourists, the New Zealand Government, and related tourism suppliers have various responsibilities and obligations. Based on the results of this research, some suggestions can be made to Chinese self-drive tourists, the Government, and related tourism suppliers.

### **1. *For Government***

- 1) The New Zealand Government should improve the content of *Driving in New Zealand* to address Chinese driving habits.
- 2) The infrastructural facilities should be upgraded on popular routes in South Island.

### **2. *For tourism suppliers (e.g. rental companies)***

- 1) Car rental companies should provide appropriate vehicles to tourists.
- 2) Rental companies should check the vehicle before tourists pick it up.
- 3) Rental companies should provide education in road safety to customers.
- 4) Rental companies should offer multi-lingual (including Chinese) services to tourists when possible.



### ***3. For Chinese self-drive tourists***

- 1) Locate petrol stations and rest stops when planning routes.
- 2) Check weather information before the journey
- 3) Select a vehicle that is relatively new and in good condition, and check it carefully before leaving
- 4) Consult the local people on traffic rules
- 5) Practise driving before the journey
- 6) Be careful and cautious when driving at all times

## **6.3 Significance of the research**

China is the second-largest tourist-generating country for New Zealand, as the Chinese self-drive tourist group has started growing in recent years. Therefore, the need for research into Chinese self-drive tourists' attitudes and behaviours to driving safety in New Zealand is urgent.

Car accidents can not only injure tourists or cause locals to be killed or injured, but can also negatively influence the image and reputation of tourism in New Zealand. This research helps identify which channels can effectively provide safety-related information to Chinese self-drive tourists, what safety problems or potential safety risks Chinese self-drive tourists may encounter on the road, and how Chinese self-drive tourists deal with these safety problems. The findings can help tourism service suppliers and organisations take more effective actions to ensure the safety of Chinese self-drive tourists. Furthermore, the research has identified the reasons that may have caused Chinese self-drive tourists to encounter safety problems on the roads. These reasons could be the basis of a new direction in research into Chinese self-drive tourists' road safety in New Zealand.

## **6.4 Limitations and future research**

This research has some limitations due to the methodology. Firstly, the results of qualitative research might be affected by the researcher's subjective consciousness (Anderson, 2010). Qualitative research is different from quantitative research. It is more focused on exploring the nature and deep meanings of a phenomenon, which is "inquiry from the inside (Evered & Louis, 1981, p.388). Furthermore, some qualitative research methods require researchers' direct contact with participants, and they need to rely on their subjective consciousness to judge and understand the information that participants have provided (Ospina, 2004).

Therefore, the preciseness of research is difficult to guarantee, and research results cannot be objective and exact (Anderson, 2010). In this study, the researcher read every post, and filtered the content in accordance with the research aims and objectives. The researcher relied on individual experience and subjective judgement to select content for the research. In addition, as the posts were in Chinese, and the researcher being a non-English speaker, the translation of the contents might have resulted in some slight differences from the intended meaning. Therefore, the research findings may not be rigorous.

Secondly, the target sample size of 50 online postings was small. Some posters might not have mentioned many safety problems in their posts. It might be difficult to find common safety problems among all Chinese tourists who have New Zealand driving experience. Furthermore, due to only a few posters mentioned their age and address in this research, the results of this research and some demographic information may not be representative of the group of Chinese self-drive tourists who drove in New Zealand.

Thirdly, the truth of information from the internet is difficult to guarantee, particularly personal information such as age and address. Although it was possible to find clues to participants' ages from the photographs in the posts in this research, researchers could not use these information to determine the demographic information. Therefore, the demographic information might be inaccurate.

Fourthly, it was difficult to explore the attitudes to road safety through online platforms. This research project focused on the attitudes of Chinese self-drive tourists to driving safety in New Zealand. However, most posters who had New Zealand driving experiences shared only their actual experiences in New Zealand rather than discussing or sharing their ideas about road safety in New Zealand. Therefore, the research could only deduce their attitudes to road safety through their text descriptions of driving experiences, but did not know their actual thoughts about road safety.

Fifthly, the research did not target the Chinese tourists who had encountered serious safety issues on the road in New Zealand. According to previous literature on road safety, most research into international tourists' road safety analysed official data to determine the reasons for car accidents. However, the target group in this research project was Chinese self-drive tourists who had had New Zealand driving experiences, rather than Chinese self-drive tourists who had incurred car accidents in New Zealand. The self-drive tourists' experiences only

illustrated some potential safety risks that could result in car crashes rather than specific safety issues that will result in car crashes. Wilks, Watson, and Faulks (1999) previously mentioned that road crash data, hospital records and insurance claims should be collected to analyse the reasons for international tourists' car accidents. These three resources would be more objective and factual in helping researchers understand the reasons for car accidents.

Based on the foregoing, there are two recommendations for future research. Firstly, there should be more specificity and objectivity in future research. This research has identified the reasons that might result in Chinese self-drive tourists incurring safety problems on the roads, but is missing adequate supporting data. Primary research using questionnaire surveys and interviews are needed to identify a real understanding of road safety and the travel experiences of Chinese self-drive tourists. Secondly, future research should also target car rental companies to identify their understandings of what facilities and services are needed to prevent road incidents and enhance the driving experiences of international tourists. Overall, the research has provided implications to the New Zealand Government and tour operators in establishing strategies to improve the road conditions and traffic regulations critical for the safety of international tourists as well as the local people.

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8. Appendices

8.1 Examples of online postings from Mafengwo.cn


马蜂窝

新西兰自驾游安全


全部商品游记攻略问答景点酒店用户

登录注册


以下是为您在“新西兰自驾游安全”找到507相关结果



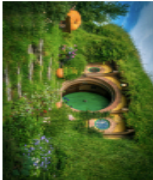
带着父母新西兰南岛13天自驾游——敢和旅游策划师...  
基督城【带着父母去旅行】之【新西兰南岛13天自驾游】敢和旅游策划师PK的行程设计...父母一起旅行，更多国内自驾游行程敬请关注...  
5053浏览




新西兰攻略 | 7天自驾游全攻略  
DAY1.开启新西兰自驾游！去看凯库拉海豹 DAY2.在瓦纳卡湖上驾驶飞机，遨游天...风景美不胜收呀~都说新西兰城市在北岛...  
35198浏览



新西兰南北岛自驾游全纪录：四场徒步、三次冒险、...  
1级在每个景点活动介绍之后会有提示。>NZD 新西兰币，新西兰币：人民币=1:4.5 >...跟4：蒂卡波湖的星轨 >简介 | 关于新西兰...  
82472浏览




新西兰最新自驾游攻略-第一次去新西兰，选择自驾游...  
最近1次去新西兰是今年年初，我和几个小伙伴选择的在租车自驾游。今天就简单谢谢新西兰的游玩攻略吧...1 第一次去新西兰自驾游，有哪些体验是必...  
9445浏览




新西兰南岛行程结束，开始北岛自驾游-2019年3月新...  
找，一定要安排出富裕的时间）新西兰南岛行程结束，10天自驾2300公里。

附近热门景点


全部景点 >>




新西兰-蒂卡波湖




新西兰-好牧羊人教堂




新西兰-霍比特人村




新西兰-瓦纳卡湖




新西兰-奥克兰




新西兰-但尼丁




新西兰-格林诺奇



新西兰-伊甸山



天空塔



火车站

新西兰最佳酒店

更多新西兰酒店 >>

1 新西兰奥克兰机场酒店

¥439

2 新西兰传统民宿

¥345

3 新西兰摩拉基大圆石露营地

¥281

4 新西兰奎尔山林小屋

¥935

5 棕色新西兰旅行者旅舍

¥277

66

8.2 Examples of online posting from Qyer.com

穷游目的地 锦囊社区 行程助手 商城酒店 民宿特价酒店

Q | 淘 注册 登录

新西兰自驾游安全

全网比价

酒店(2000+)

帖子(276)

问答(152)

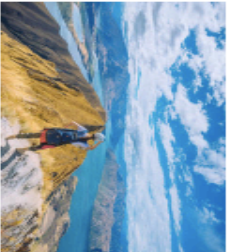
行程

旅行商城

用户

综合

为您找到“新西兰自驾游 安全”相关帖子结果 276 条 筛选 推荐排序




游记

南天星下，好梦难醒——新西兰南岛自驾游 (20190207—20190223) ★精华

住宿指南

安全的考虑，贴上最重要的提示：务必提前熟悉新西兰的交规！务必提前熟悉新西兰的交规！务必提前熟悉新西兰的交规！具体的交通规则在这里并不展开，附上新西兰新疆天池，赞一个”，另



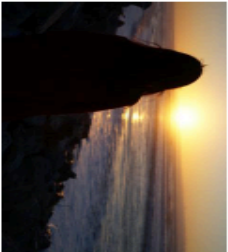
lhwij 2019-11-23

12246人浏览

11

177


最后回复 9天前



游记

给自己的礼物 (2018年10月14日新西兰南岛自驾游) 住宿指南

是分享每一步的心得体验和之前做攻略过程中看到和自己旅行过程中认为比较有用的实用信息，整篇游记按照时间顺序写，内有大量干货。个人认为更适合初次去新西兰的小白，二刷三刷的朋



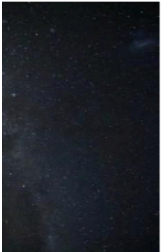
manba08 2018-10-27

4217人浏览

131

23

最后回复 39天前



游记

新西兰南岛自驾游建议 (供参考) 住宿指南

一下吧。1、高空跳伞：墙裂推荐！！本来打定主意不跳的，结果出发前被队友一句“跳了后悔三年，不跳后悔一辈子”给您您报了名。跳伞在新西兰 实际已经算是一个安全系数很高的常规

国家指南 热门城市 景点玩乐 行程路线

游记 商城 社区 地图

发新站

论坛首页

67

## 8.3 Examples of database contents

AutoSave OFF

Home Insert Draw Design Layout References Mailings Review View

WY Database — Saved to my Mac

Share Comments

Database for participation

Record Date: 10/10/2019

**Sample1: Female, Shenzhen, North and South Island, 2017**

**Poor Road condition: narrow road**

下午三点多赶去特卡波, 7点多开到。中间有个小事故, 小伙伴开车的时候对面来车道路比较狭窄就紧张猛打了下方方向盘, 车从左边道飞到了旁边对行车道的隔离带上, 吓得不轻以为要翻车了🚗后面就换我开了, <https://bbs.gyee.com/thread-2814377-1.html?authorid=4664114>

**Sample2: Male, Shenzhen, South Island, 2017**

**Car condition**

自驾第一程, QUEEN'S TOWN去峡湾, 回来路上还遇到爆胎, 换胎整了好久没成, 最后在附近当地人的帮助下, 叫了救援送往附近城市 (友情提示, 去峡湾路上信号不好, 需注意开车安全)

<https://bbs.gyee.com/thread-2814293-1.html?authorid=2284015>

**Sample3: Male, Shanghai, North and South Island, 2017**

**Poor Road condition: repair road**

新西兰的公路多数是双向2车道, 部分桥梁路段设置为单边通行, 现在1号公路从基督城到凯库拉虽已打通, 但是部分路段, 特别是山区和靠海的路段, 由于塌方影响和维修作业的需要, 很多路段都变成单边通行的路段, 所以, 路上走走停停, 也花费了3个半小时才到达凯库拉。

**Car condition**

就在和跑车分手后, 我们继续行驶在山路上, 突然感觉车子左前轮处有异响, 感觉是轮胎出问题了, 于是赶紧靠边停车, 下车一看, 我那个去啊, 左前轮胎爆胎, 已经冒烟了。

<https://bbs.gyee.com/thread-2813707-4.html?authorid=1476438>

**Sample4: Male, , South Island, 2017**

**Special**

然要遵守当地的交规, 我们很注意了, 但还是被罚了一次。从wanaka到皇后镇的山路上被警车叫停还开了罚单, 原因是我们开的太慢了! 对, 你没看错, 是太慢了, 道路狭窄后面跟了4辆车, 我们没有让道给他们超车。那段路的限速是55公里, 我们时速大概开50左右, 交警说这个限速只是参考速度, 跟车超过4辆就要让让。

Page 1 of 19 756 words English (United Kingdom)

Focus 140%

## 8.4 The booklet *Driving in New Zealand*

