

CURTIN UNIVERSITY

**SCHOOL OF INFORMATION SYSTEMS**

**Investigating Chinese tourist travel patterns in  
Western Australia: Routes generation.**

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## **ABSTRACT**

Chinese visitors play a crucial role in WA's tourism industry, but there are a limited number of publications on this specific topic. Western Australia's tourism sector has considerable differences to the eastern states' (Sydney-Melbourne-Brisbane hub) sector. As Western Australia offers certain specific tourist destinations, it is necessary to contrast what is required and what can be offered through the local value chains. Supply chain tools such as data analytics, prototype routes generation and value chain analysis will be used to gather more knowledge about the Chinese holiday tourists, evaluate their needs when traveling around Western Australia and propose supply chain solutions.

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## CHAPTER 1 – INTRODUCTION

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*This chapter presents the economic and social importance of tourism in WA, emphasises the role of WA Chinese holiday tourists and the gap of knowledge referred to this target market. It then provides a discussion on the use of supply chain management tools such as routing, supply chain integration and demand management for improving the local services focused on the Chinese holiday visitors. The chapter also define the aim of the study, state the research questions as well as auxiliary sub-questions and the limitations to this research study*

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### **1.1 Introduction**

The necessity of diversifying the economy through tourism is vital for the state of Western Australia (WA). According to the last report of Tourism Western Australia (State Government agency) at September 2016, 921,400 international visitors came to WA. 2016 was the first year with more than 900,000 visitors, an increase of 8.2% from the previous year. (Tourism Research Australia 2016a).

The tourism industry has overtaken mining as the primary source of employment in WA, with tourism accounting for 89,000 jobs, compared to 80,000 jobs in mining (Roberts 2017). Government policy regarding Tourism was at the core of the WA Labor leader Mark McGowan’s successful 2017 State election campaign proposal (Roberts 2017).

If the group of international tourists are separated into principal components by nationality, we will find that the Chinese visitors numbered 43,700 in 2015. They were the second largest international market by spending, with \$231 million dollars spent (Tourism Research Australia 2015). From this group of visitors, the subcategory of “Holiday” tourists represents the highest spend and longest stay in WA (See Section 3.3.2). Also, WA’s tourism industry differs from the eastern Australian states, which are a separate cluster (See Chapter 3.3.5). Therefore, as specific information related to this segment of the market was not found available (See Section 3.3.6) detailed research is necessary to analyse Chinese holiday tourism in WA.

To improve the current state of this industry in WA based on the challenges discussed above, different supply chain management approaches can be taken. Routing is a supply chain management tool used to optimize transportation processes in terms of cost, distance or time (Fink 2008). In the global tourism industry, some companies have been using routing techniques and software to generate added value into their value chain (Wörndl, Hefele and Herzog 2017). The use of this technique based on the adoption of concrete information from the Chinese holiday tourists such as routing factors (See Chapter 5) may unveil hidden real opportunities for the WA local businesses (See Chapter 7). Furthermore, the use of supply chain (SC) management tools such as SC integration and demand management (analysis of current suppliers) can provide fruitful results for service industries such as tourism (Zhang, Song and Huang 2009). These applications should be based on accurate information of the targeted market

## CHAPTER 2 - SIGNIFICANCE OF THE RESEARCH

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*In order to reaffirm the significance of WA Chinese holiday tourists to the WA economy, new information will be presented. The following parts of this Chapter will define the aim of the study, the research questions as well as auxiliary sub-questions and the limitations of the study.*

---

In addition to arguments expressed in Chapter 1, it is important to mention that Chinese holiday visitors represent 67% of total arrivals in Australia for leisure, and on average each one spends approximately 7,036 AUD (Tourism Research Australia 2013c). These visitors can be categorized by the purpose of their visit (holiday, business, visiting family and education/employment), each holiday visitor spends around 434 AUD per night, and each business visitor spends around 265 AUD per night (Tourism Research Australia 2013c).

The latest “International Markets Profiles” report of Tourism Research Australia (TRA) released on March 2017 illustrated that Chinese holiday visitors represented 43% of the total WA Chinese visitors in 2016. Additionally, from 2015 to 2016, the estimated expenditure of WA Chinese visitors increased by 9.3%, the number of visitors also increased by 17.4% and number of nights spent moved up by 5.1%. These numbers confirm, that the relevance of this target market for the WA economy is growing. Additionally, this chapter will review the current state of art of empirical research related to Chinese tourist market in WA.

### **2.1. AIMS OF THE STUDY**

This study aims to improve the current economic and social status of WA by generating added value for the services aimed at Chinese holiday tourists. The study intends to achieve this added value through filling the knowledge gap about this target sector. Then, using this knowledge to generate routes, the study will suggest a mode of integration for the WA tourism supply chain partners and finally, review if the region is providing what the target market requires (See delimitations).

### **2.2. RESEARCH QUESTIONS**

The goal of this study is to generate added value to the services aimed at the WA Chinese holiday tourists.

This aim has been transformed into research questions as follows:

- a) What type of factors should be considered when designing routes for Chinese holiday visitors in WA?*
- b) How is it possible to improve Chinese holiday tourists' experiences in WA trips?*

In order to answer these research questions in an appropriate way, some sub-questions have been developed for this study:

- a) What are the main factors/characteristics of WA Chinese holiday tourists to be considered when designing tourism routes for them? Which places are currently most visited by Chinese holiday tourists?
- b) Is it possible to generate routes for these popular tourist destinations? How?
- c) What are these tourists' needs when traveling in WA routes? Which complementary businesses are needed to improve the services on these routes?

### **2.3.DELIMITATION**

Due to the extensive amount of improvement possibilities in this sector and the time restriction, the research will restrict itself to the points listed below:

- a) The primary emphasis of this dissertation would be to determine the characteristics of the target market (i.e. WA Chinese tourists) and generate routes based on the aforementioned identity characteristics.
- b) This dissertation will focus on offering general business ideas for supply chain integration and demand management (accommodation) but will not provide a business plan.

It is important to note that several relevant topics will not be discussed in this study. These topics are: citing legal framework in transportation and tourism, quantitative information of services required by the target market (demand forecasts included), Chinese or Australian social media, political debate about WA tourism, details of other groups of tourists in WA and their impact on the Chinese holiday visitors. Even though these topics have a great importance and deserve to be studied carefully and individually to obtain a complete

understanding of the targeted group behavior, they will not be discussed because they are outside the scope of this study as mentioned above.

#### **2.4. AUDIENCE**

The issues examined in this study will be particularly useful for:

- a) Local, Australian and international tourism agencies, government travel agencies and other institutions dedicated to the collection of tourism data.
- b) Large (Hotel companies, Transperth, and multinational organizations), medium (local park providers and tourist destination companies) and small (restaurants and stores) businesses all around WA.
- c) Political parties, media, academics, potential tourists and any individuals who are interested in this area..

Considering the mentioned goals, limitations and research questions to answer, the study requires a solid review of the current state of the art, a critical review of the situation as well as of what can be improved. As such, the next chapter provides a review of literature in the topic of interest in this study.

## CHAPTER 3 – LITERATURE REVIEW

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*This chapter provides a review of literature on WA Chinese tourists. The chapter begins with WA's tourism industry background, followed by a deeper analysis from an Australian Chinese holiday tourist that will demonstrate lack of research regarding the Chinese Holiday tourists in WA. The chapter then reviews routing concepts and software before presenting the logistic factors required to generate the routes will be obtained.*

---

### 3.1. INTRODUCTION

Over the last few years, WA government has worked tirelessly in trying to diversify its economy (Crowe 2013) as the main economic driver is mining (Department of Treasury WA 2016). Therefore, tourism represents a good opportunity to create jobs and a diversity of new businesses (See Chapter 2). WA's popular tourist destinations are well recognized all around the world because they are beautiful, natural and well protected ("Tourism in Wa: In Touch with a Sustainable Future" 2002). Ecotourism is also a path to provide WA a sustainable future environmentally ("Tourism in Wa: In Touch with a Sustainable Future" 2002). Some of these sustainable tourism strategies have been planned since 2000. The wine industry in WA is an excellent example of how local jobs were created, new businesses have been set up in regional areas, and WA's exports raised (Carlsen and Dowling 2001).

Besides the increase of tourist destinations in WA, studies about the customers have been performed since the last decade (Shanka, Ali-Knight and Pope 2002). Their study revealed the importance of foreign tourists including tourists in the local economy, and pointed out the relevance of international students in the regional income (Shanka, Ali-Knight and Pope 2002). It estimated that Chinese tourist market value would be between 7.4 to 9 billion AUD by 2020 Australia wide (Tourism Research Australia 2013b). The report also stated that 42% were repeated visitors, 68% come for leisure, and their spend was \$7,036 AUD per day making them attractive customers for Australia (Tourism Research Australia 2013b). Hence, it is important to understand WA's strengths and how opportunities related to this market should be undertaken.

### 3.2. TOURISM IN AUSTRALIA

#### 3.2.1. Relevance of tourism in Australia

According to the government report “The Economic Importance of Tourism in Australia’s Regions,” tourism represents 2.6% of Australia’s GDP and by 4.6% of Australia’s employment (Tourism Research Australia 2011). The report also stated that the sector grew at a 12% rate each year from 2002 to 2012 (Tourism Research Australia 2011).

There are 84 classified tourism regions in Australia but five in WA. The five tourism regions in WA are: Experience Perth, Australia’s Coral Coast, Australia’s Golden Outback, Australia’s North West and Australia’s South West (Tourism Research Australia 2011).

From the next figure (Figure 1) (Tourism Research Australia 2011), Sydney, Melbourne, Brisbane and Gold Coast are the top 4 tourism regions from expenditure standpoint. Experience Perth region is lightly below the top four regions, therefore there is a need make necessary improvement in order to compete with the top four regions (Tourism Research Australia 2011) (Table 1).

The same report (Tourism Research Australia 2011) points out in the above table that Experience Perth has less than the half of the total tourism expenditure of Sydney or Melbourne.

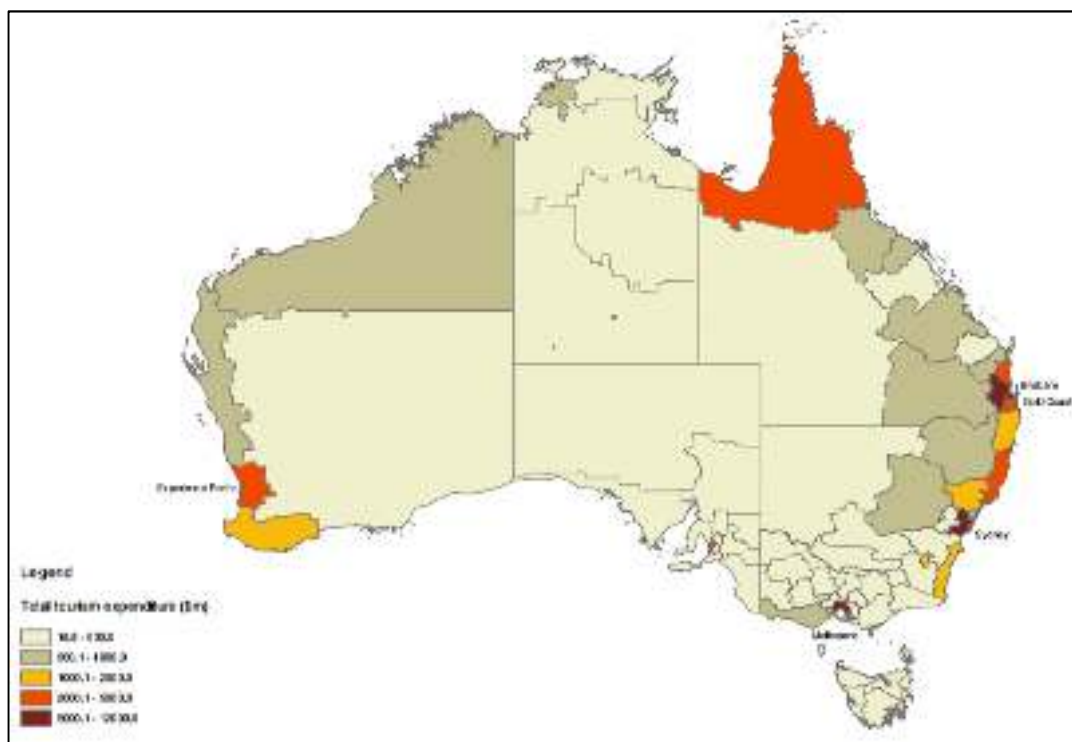




FIGURE 1 AUSTRALIA’S TOTAL TOURISM EXPENDITURE 2007/2008

Rank	Tourism region	State	Economic importance of tourism	Total tourism expenditure
			%	Purchaser’s prices, \$m
67	Sydney	NSW	2.4	11,751
69	Melbourne	Vic	2.3	9,120
71	Brisbane	Qld	1.9	5,068
72	Adelaide	SA	1.7	2,325
73	Experience Perth	WA	1.6	4,474

TABLE 1 LESS DEPENDENT REGIONS WITH LARGER TOURISM INDUSTRIES.

Nowadays, the most recent report of TRA indicates that tourism contributes \$53 billion of the Australian GDP (7% of it) (Tourism Research Australia 2016b). It is also highly important to the Australian economy because it employs 580,200 people all around Australia (Considering the 89,000 jobs for WA mentioned in Chapter 1).

However, domestic tourism contributes to the highest percentage of income to the industry (59 billions) in comparison to to the international visitors (38.1 billions). Nevertheless, the number of international visitors is growing at a higher annual rate (10%) compared to domestic tourists (7%) in the last year in the 2015-2016 calendar year, and each international tourists contributes more than the an average local tourists (Tourism Research Australia 2016b).

### 3.2.2.Characteristics of Australian tourism market

The next map (Figure 2) (Tourism Research Australia 2016b) points out that the Asian foreign tourism industries are growing at a higher rate than the US or New Zealand. China is leading the international tourism market growth (Tourism Research Australia 2016b). However, as seen in point 3.2.1., the Australian industry is growing considerably in this way as well and it is projected to expect \$4.2. billion only from Chinese tourists by 2020.

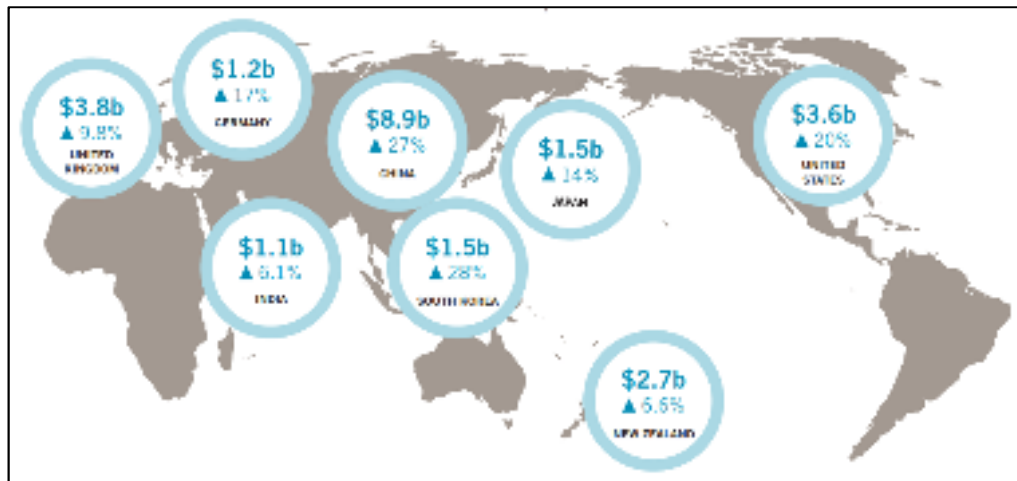


FIGURE 2 INTERNATIONAL VISITORS MARKET EXPENDITURE

According to Figure 3, retrieved from (Tourism Research Australia 2016), it is visible that the revenue earned from holiday tourists is the highest in Australia. Also, this figure points out that if the revenue from education and friends and relative’s visitors are summed, the sum would be equivalent to the expenditure of the holiday.

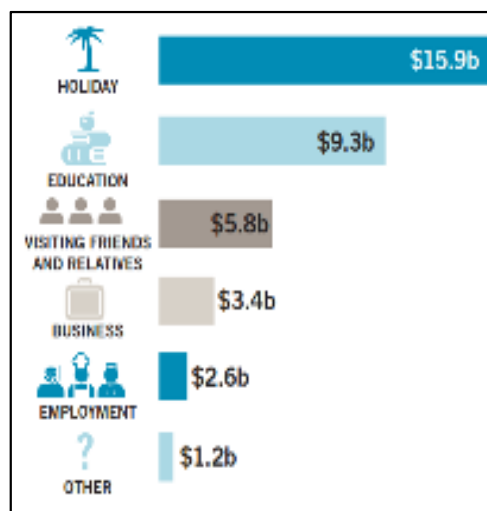


FIGURE 3 EXPENDITURE BY REASON TO VISIT AUSTRALIA.

Figure 4 presents an accommodation choice structure by expenditure where it shows that the overwhelming majority of international visitors prefer to rent a house or apartment rather than use hostels or caravan parks (Tourism Research Australia 2016b). The next most popular option was accommodation in self owned property. Hence it is one of the characteristics of this market to be oriented towards apartment rentals and property businesses.

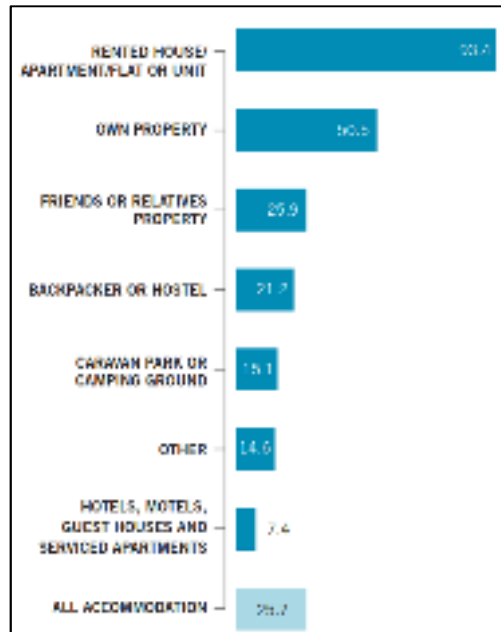


FIGURE 4 EXPENDITURE BY REASON TO VISIT AUSTRALIA.

One of the most relevant characteristics of the Australian tourism market is the current route-hub design. Majority of the international tourists arrive into Australia via Sydney and Melbourne (Tourism Research Australia 2016b). In local routing perspective, the routes include Sydney, Melbourne, and Brisbane (Tourism Research Australia 2016b) again. Thus, this means that WA and Experience Perth are excluded from the central Australian Hub.

There were approximately 273,512 tourism business in all Australia by 2015 (Tourism Research Australia 2016b). This represents 13% of the total amount of companies in Australia (Tourism Research Australia 2016b). The report states that larger businesses are being created at rate of 16% every year while medium businesses at 7%. It is important to emphasise that 80% of the companies are located only in New South Wales, Victoria and Queensland (Tourism Research Australia 2016b).

### 3.3. CHINESE TOURISTS IN AUSTRALIA

#### 3.3.1. General information based in Australia

Understanding the relevance of Chinese tourists in Australia and WA is essential for this study. As stated in Section 3.1., Chinese tourists potential is estimated to be valued from

7.4 to 9 billion AUD by 2020, and in 2012, the total spend from Chinese tourists was already estimated at 4.2 billion AUD. In touristic business terms, 47% of them were repeat visitors. These tourists spend on average 7,036 AUD per trip, on average they stay 47 days, they book their trips in October-January and May-June, and they remain in Australia from December-February and July-August (Tourism Research Australia 2013a).

In general, Chinese tourists expect from their destination (in order of importance) (Tourism Research Australia 2013a):

1. Natural beauty
2. Security and safety
3. High quality in food and wine
4. Friendly attention
5. Native and cultural heritage events

They also find in Australia (Tourism Research Australia 2013a):

1. Value for money
2. Exciting local wildlife
3. Luxury accommodation possibilities
4. Natural attractiveness
5. Easy visa access

### **3.3.2. Holiday tourist class**

Chinese holiday tourists represent 51% of the total Chinese visitors to Australia (Tourism Research Australia 2013a).

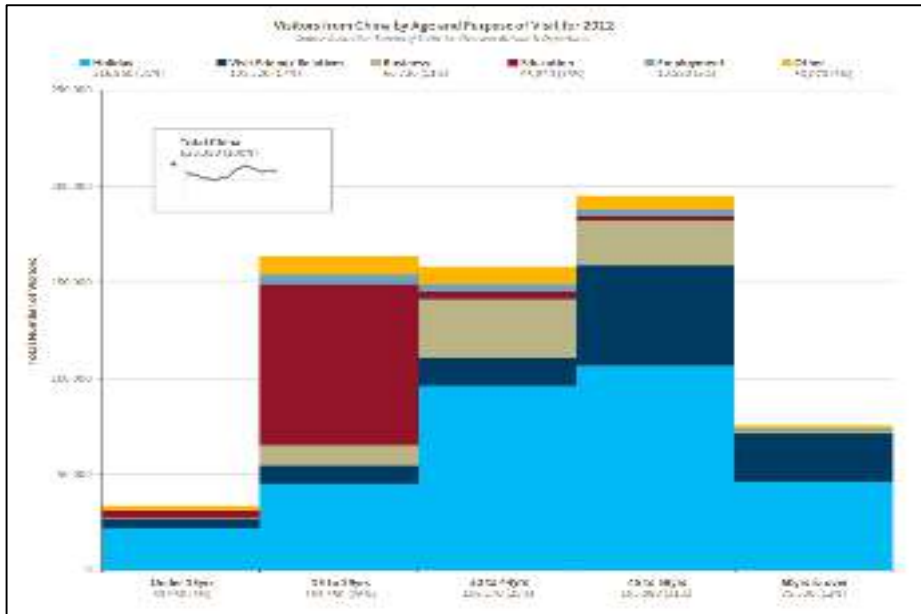


FIGURE 5 CHINESE HOLIDAY VISITORS DISTRIBUTION BY AGE.

Additionally, Holiday visitors were by far the largest category and were also increasing at the highest rate. (See Figure 7) (Tourism Research Australia 2013a).

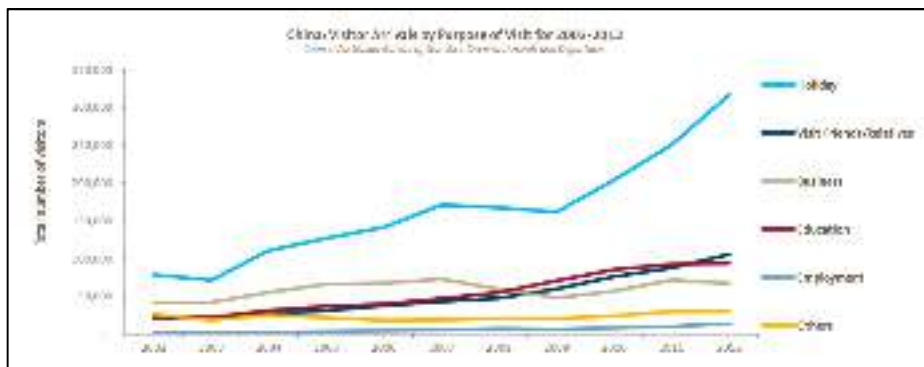


FIGURE 6 CHINESE VISITORS GROWING RATE BY VISIT PURPOSE.



FIGURE 7 CHINESE VISITORS SPEND BY VISIT PURPOSE.

As seen in Figure 7 holiday tourist spends seven times more than one who comes to visit family, 1.63 times more than a business visitor and almost four times more than a student or working visitors (Tourism Research Australia 2013a). Hence, given how much they spend, the growing rate and total proportion of visitors, holiday visitors can be considered an attractive target for this study.

### 3.3.3. Range of age

Figure 8 shows that there are not many Chinese children touring Australia (Tourism Research Australia 2013a). The majority of the tourists are aged between 30 and 59. Nevertheless, in addition to categories of older tourists, it is also important to consider the 15-29 year old category because of its size and growth rate (See figure 7).

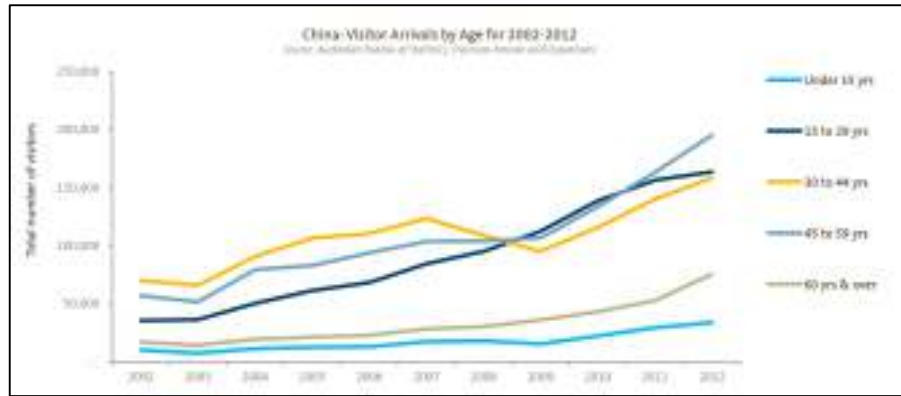


FIGURE 8 AGE RANGES GROWING RATE.

### 3.3.4. Primary interests

In order to create routes (itineraries) and analyze the value chains in WA tourism industry, it is important to have examine its tourist's attraction features. Chinese tourists prefer to visit beautiful natural tourist destinations that are safe and secure (Tourism Research Australia 2013a). The government report states that Chinese tourists want to visit beautiful natural tourist destinations which must also be safe and secure (See figure 9).

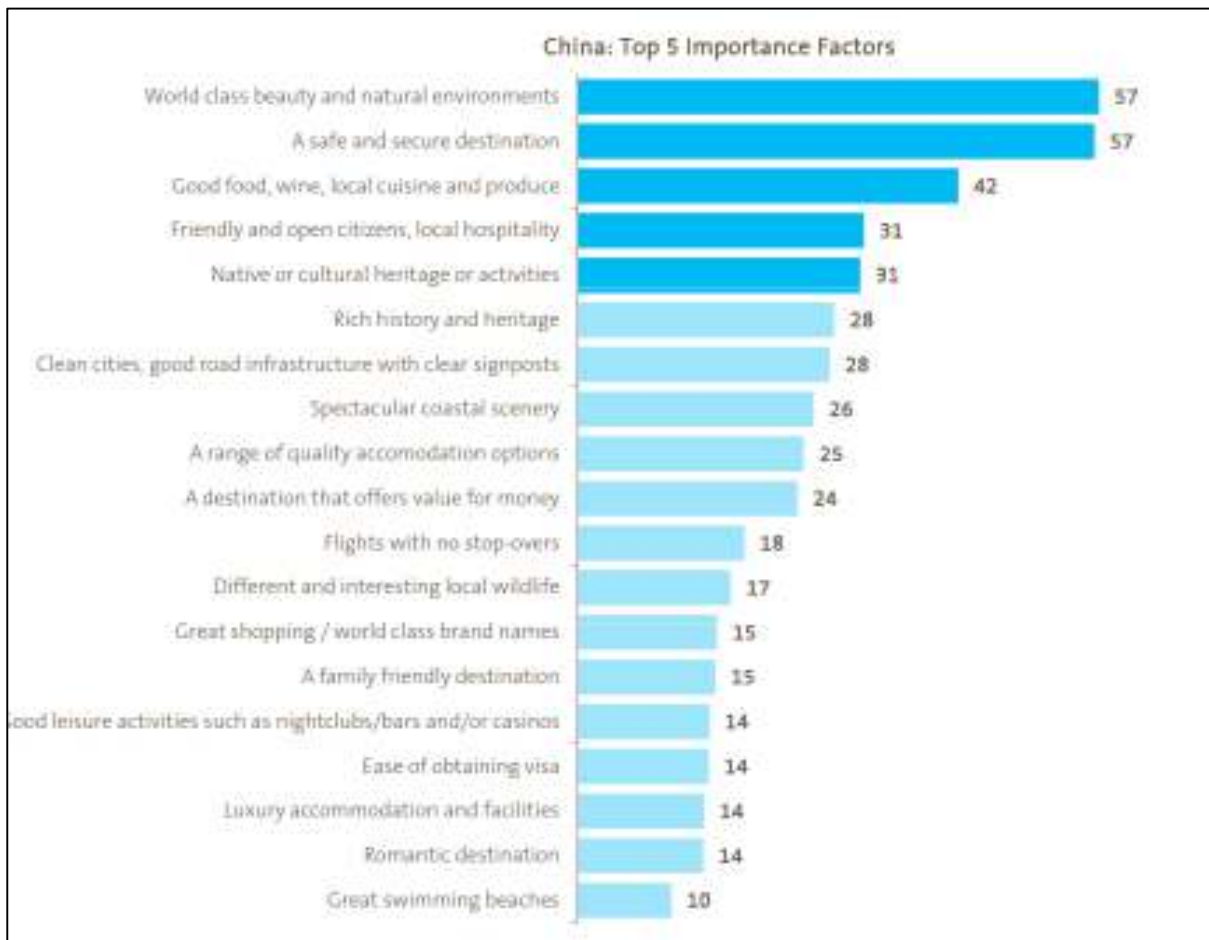


FIGURE 9 CHINESE INTEREST FACTORS (TOP 5).

From the previous graph of bars (Tourism Research Australia 2013a), it is also visible that Chinese tourists look for excellent local cuisine and produce. Additionally, they want to go to places inhabited by friendly and open citizens, and these places should have many native or cultural activities.

### **3.3.5. Departure city for Chinese tourists in Australia and specifically in Perth**

According to TRA (2013) report, Chinese tourists arrive directly to Perth from Hong Kong, Singapore and Guangzhou (China) (Tourism Research Australia 2013d). Chinese tourists that depart from Beijing, Shanghai, or Nanjing, can come to Perth in two ways (See next figure (Tourism Research Australia 2013d)):

1. make a connection in Guangzhou, or
2. via other Australian cities (Melbourne, Sydney or Brisbane).



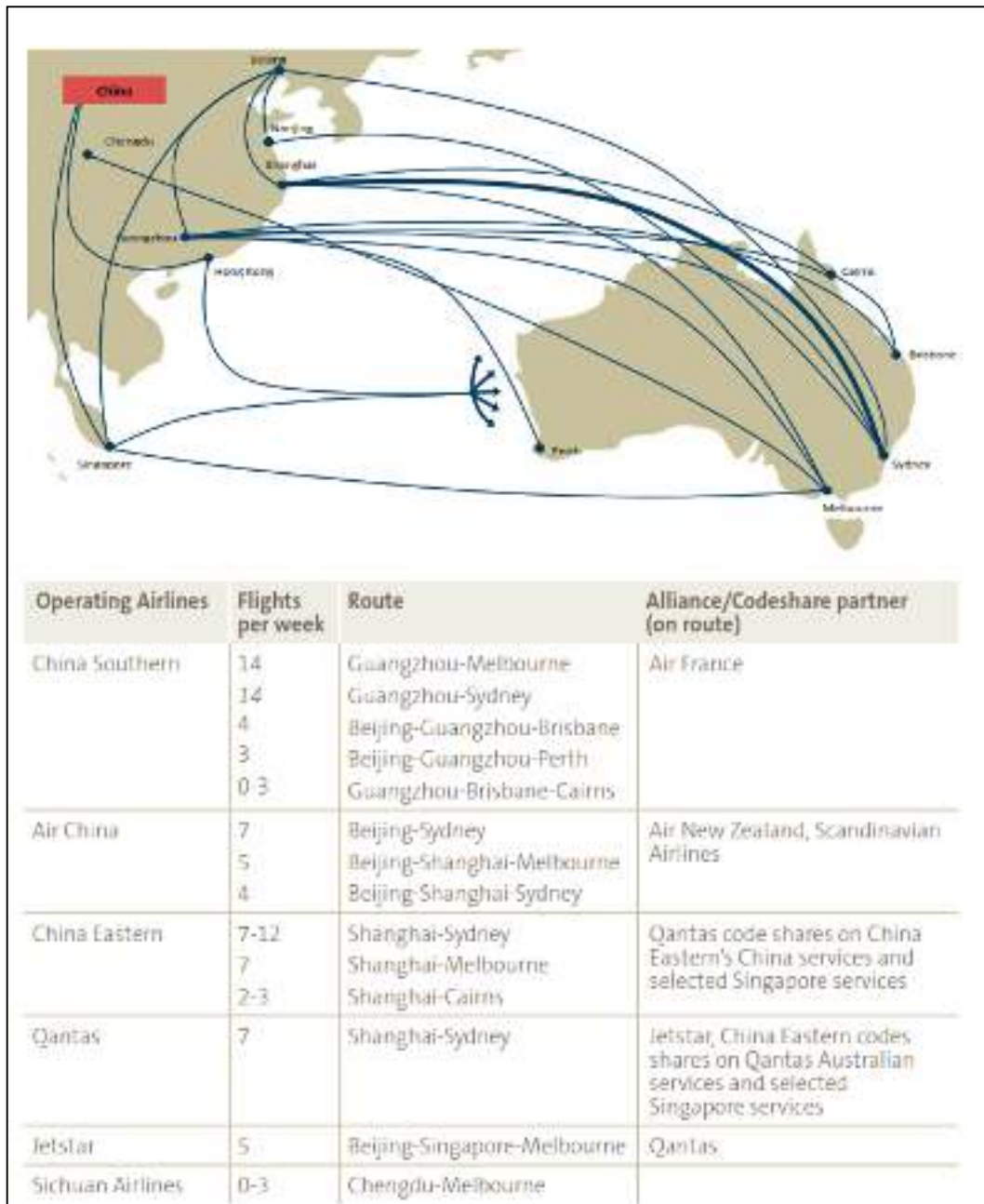


FIGURE 10 CHINESE TOURISTS' FLIGHT ROUTES TO AUSTRALIA

### 3.3.6. Lack of specific research orientated for the WA Chinese tourism market

WA is geographically far from the eastern states Cities and presents different tourist attractions and an entirely different range of airplane connections to Chinese cities compared to eastern state capital cities (Tourism Research Australia 2013d). Therefore, accurate information about WA Chinese tourists be analyzed and used when planning strategic policies for WA Chinese tourism. However, there is lack of research and literature. This researcher conducted a search on Curtin Library and Google Scholar but

no articles were not found in relation to WA Chinese tourism (see Appendix 1 Tables 2,3 and 4).

In closing, there is plenty of information for Australia but almost nothing for WA specifically. As seen at the beginning of this chapter, WA has distinctive characteristics to the other capital cities. Therefore, it is necessary to perform research on this topic.

### **3.3.7. WA tourism destinations based on the top 5 Chinese tourist interests**

Based on related literature of the WA tourism attractions and Chinese preferences regarding tourism, this section presents an initial match of what is offered in WA and Chinese tourists preferred attractions.

- 1) With regard to world class beauty and natural environments, Perth has the spectacular views of the city's skyline since 1872, at morning time its beaches, sand and sea prove to be its biggest asset (Cottesloe and Fremantle), the beauty of Margaret River (Mitchell 2008) and last but not least the Pinnacles in the north of city (Yue 2002).
- 2) From a culinary perspective, interesting restaurants and coffee shops at Mt Lawley, "right" wineries such as Amberley and Xanadu, Margaret River chocolate factory, the Lobster restaurant at Cervantes and luxurious award-winning bars and restaurants at Burswood Entertainment Complex and Northbridge (Mitchell 2008).
- 3) About accommodation, some of the most famous luxury hotels in Perth are "Burswood" with 405 luxury rooms and "Ibis Perth" with 192 luxury rooms (Mitchell 2008).
- 4) In terms of security, WA can be assumed to be a safe environment in terms of level of crime. Governmental policy in 1998 facilitated the use of cars, stimulating the development of sustainable communities, which in return reduced the rate of crime in WA. This 'New Urbanism' perspective was recognized with an "Annual Charter Award" from the Congress of New Urbanism in 2001 regarding safety (Foster et al. 2016).

- 5) Regarding cultural tourism, as in other states in Australia, Aboriginal tourism is present in WA in the Kimberly region, where Aboriginal communities on the Dampier Peninsula offer accommodation, tours and vehicle rental. (Zeppel 2003).

WA's indigenous led tourism industry is not as well developed as in the Northern Territory and Queensland regions (Zeppel 2003). Currently, Tourism Australia is promoting indigenous tourism operators through the name of "Indigenous Tourism Champions". ("Australia : Latest Tourism Ads Sell Wa's North" 2017). These web site allow tourists to choose aboriginal experiences as well as aboriginal owned operators from WA or from other Australian states.

### **3.4. TOURISM SUPPLY CHAIN**

There are many supply chain management applications used in the tourism industry (Song 2012). In her book, Song (2012) describes how partners within a supply chain can cooperate with each other in order to achieve great results such as improve combined movements (Guo and He 2012). A good example of coordinated movements in the tourism industry is relationship between hotels and tour operators. Both parties advertise information about their products in their locations, provide discounts if a visitor have already engaged with any of them and share information to create business opportunities in an empowered e-environment (Wang et al. 2015). Websites are also used to make bookings, maximize the type of services offered and engage with customers as soon as possible. Thus, supply chain cooperation using e-applications could provide opportunities to maximize the potential of tourism suppliers' products and services.

### **3.5. ROUTING**

#### **3.5.1. Routing in tourism industry**

One of the challenges for the tourism industry is the creation of sequences of popular tourist destinations for tourists or "Tourist trip design problems" (TTDP) that includes other factors than just finding points of interest (POI) (Wörndl, Hefele and Herzog 2017). Commonly used applications include Tripadvisor, Google locations and other applications designed to generate routes regarding the shortest or the fastest (Wörndl, Hefele and Herzog 2017).

### **3.5.2. Vehicle routing problem**

Scheduling a tour to visit tourist destinations is restricted by not only the layout of park facilities but also the uncertainty of waiting induced by different lengths of lines at tourist destinations. This thesis proposes a tentative solution to optimize the logistics of individual tours by considering the dynamic nature of waiting time at park tourist destinations derived from empirical data.(Xu et al. 2015). Bolvis (1996) illustrates in his study how useful are routing software when designing tourism itineraries (Bovis 1996).

Before moving forward into routing, it would be good to review two definitions:

- Factor: According to Oxford dictionary: “One of the several things that cause or influence something.” Therefore, for routing purposes mentioned previously, it would be the things that influence or affects the optimal routes.
- Vehicle routing problem (VRP): Stops sequence that allows a minimum cost or maximum profit (Eksioglu, Vural and Reisman 2009). This concept is similar to the previously discussed Tourist trip design problem (TTDP). (See 4.3.1.)

### **3.5.3. Tourism routing software**

It is important to consider a number of software such as MobyRek, Trip@dvice or DieToRecs when designing an optimal route (Wörndl, Hefele and Herzog 2017) in order to know which software will provide the best route as per your requirements. One of features of routing software is the budget management option that allows travelers to find the cheapest ticket combination and integration with ratings from the social media that ensures diversity (Wörndl, Hefele and Herzog 2017). It is also important to not forget the use of software in mobile technology in routing for tourists such as “Mtrip” (for Android and iOS devices) as its use is becoming more popular (Wörndl, Hefele and Herzog 2017).

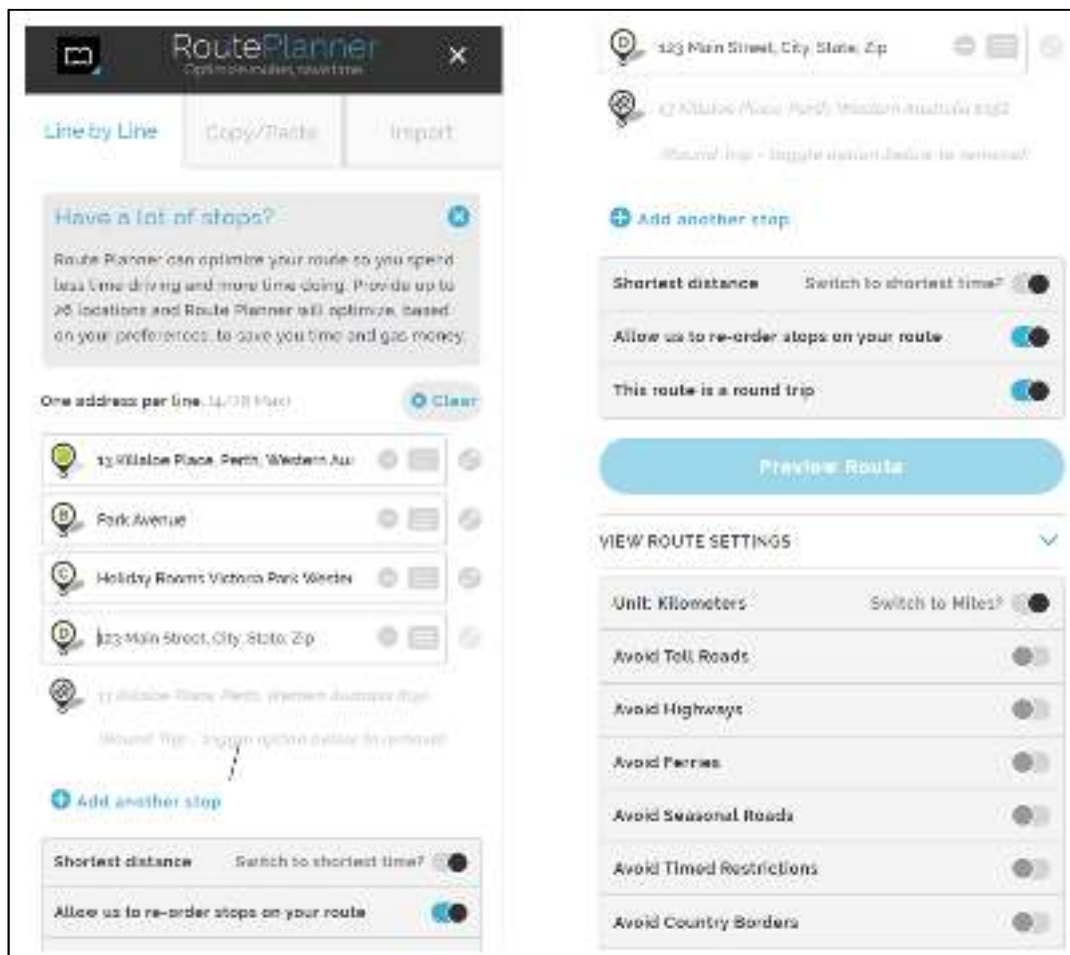
Also, the internet has available some non-fee routing applications such as MyRouteOnline, FindTheBestRoute.com and MapQuest Online which can help to optimize routes based on time, distance, a method of transportation, etc. (Manikas, Kroes and Gattiker 2016). However, in a food industry study, these software’s stated that there are limitations regarding some locations, stops and each software may present different results (Manikas, Kroes and Gattiker 2016).

### 3.6.ROUTING FACTORS AS SOFTWARE CONSTRAINS

As mentioned in 3.5.3., regarding generating routes, the factors considered in the analysis may vary depending on the software and its limitations. Figure XX shows the logistic elements of MapQuest Online and its limitations regarding stops (only one stop). Also it is important to note that MapQuest only works with 2 locations (MapQuest 2017).

#### 3.6.1. Mapquest's routing factors

As mentioned in 3.5.3., regarding generating routes, the factors considered in the analysis may vary depending on the software and its limitations. Figure XX shows the logistic elements of MapQuest Online and its limitations regarding stops (only one stop). Also it is important to note that MapQuest only works with 2 locations (MapQuest 2017).



FIGURES 11 AND 12 MAPQUEST.COM ROUTING LOGISTIC FACTORS

From Figures 11 and 12, it is possible to verify that MapQuest's Route Planner considers:

Geographical locations (Addresses), optimization by time, optimization by distance, order of events or visiting times (or without particular order), round trip options (return or not), avoidance of toll roads, avoidance of highways, avoidance of ferries, avoidance of seasonal roads, avoidance of timed restrictions and avoidance of country borders.

The next table summarizes the previously mentioned in this paragraph. Additionally, it is important to say that this software only works with 2 locations (MapQuest 2017).

Routing Factor	MapQuest
Geographical locations	X
Interest in best time	X
Interest in shortest distance	X
Specific order in locations sequence	X
Round trip option	X
Interest in toll rds. Avoidance	X
Interest in highways avoidance	X
Interest in with ferries avoidance	X
Interest in seasonal rds. Avoidance	X
Interest in with time restrictions avoidance	X
Interest in country borders avoidance	X

TABLE 2 SUMMARY OF MAPQUEST'S LOGISTIC FACTORS

### 3.6.2. Speedyroute's routing factors

The second non-fee routing software to analyze is <https://www.speedyroute.com/?referer=findthebestroute.com>. When a user looks for FindTheBestRoute.com, it is automatically directed to this website (Speedy Route Inc. 2017). Its best advantage is the number of allowed locations, and its biggest disadvantage is that it can only be used once a day in the free version.

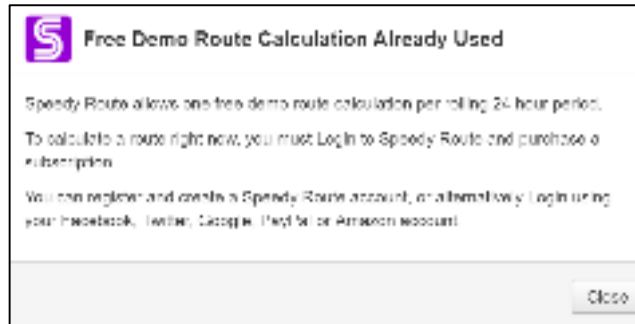


FIGURE 13 ONE DAILY TRY LIMITATION.



FIGURE 14 SPEEDYROUTE'S LOGISTIC FACTORS.

From Figure 14, it is visible that the software can use multiple locations (9). Table 6 summarizes Speedyroute's features/factors.

Routing Factor	Speedroute
Geographical locations	X
Location's visit duration	X
Number of vehicles	X
Current traffic	X

Arrival time to a particular location	X
Location visit duration	X
Round trip option	X

TABLE 3 SUMMARY OF SPEEDYROUTE’S LOGISTIC FACTORS

### 3.6.3. Myrouteonline’s routing factors

MyRouteOnline.com is a non-fee routing optimization site. It can be used many times, accommodate multiple locations, consider tourist destinations duration, multiboosting , etc. Nevertheless, the number of tourist destinations is limited because it is a trial version. The software affords 10 sites (including one departure point and one final destination). Figures 15, 16 and 17 (Myrouteonline Inc. 2017).



FIGURE 15 MYROUTEONLINE LOCATIONS LIMITATION.





**FIGURE 16 AND 17 MYROUTEONLINE'S LOGISTIC FACTORS.**

Table 7 summarizes the routing factors obtained from Myrouteonline website.

<b>Routing Factor</b>	<b>Myrouteonline</b>
Geographical locations	X
Location's visit duration	X
Interest in best time	X
Interest in considering time for lunch	X
Interest in travel mode	X
Interest in maximum number of routes	X
Interest in maximum route duration	X
Interest in maximum stop duration	X
Interest in maximum number of stops per route	X
Interest in number of travel hours per day	X
Interest in shortest route	X
Interest in time	X
Interest in best time and shortest route (balanced)	X
Interest in prioritizing the first location	X
Interest in routes sharing territory	X
Round trip	X

**TABLE 4 SUMMARY OF MYROUTEONLINE'S LOGISTIC FACTORS**

**3.6.4. Summary of logistic factors**

Finally, from Tables, 5, 6 and 7, a compilation of the logistic factors are presented in Table 8:

#	Routing Factor	Myrouteonline	Speedroute	MapQuest
1	Geographical locations	X	X	X
2	Location's visit duration	X	X	
3	Interest in best time	X	X	
4	Interest in considering time for lunch	X		
5	Interest in travel mode	X		
6	Interest in maximum number of routes	X		
7	Interest in maximum route duration	X		
8	Interest in maximum stop duration	X		
9	Interest in maximum number of stops per route	X		
10	Interest in number of travel hours per day	X		
11	Interest in shortest route	X		X
12	Interest in time	X	X	X
13	Interest in best time and shortest route (balanced)	X		
14	Interest in prioritizing the first location	X		X
15	Interest in routes sharing territory	X		
16	Interest in considering the number of vehicles		X	
17	Interest in considering current traffic		X	
18	Round trip option		X	X
19	Specific order in locations sequence			X
20	Interest in toll rds. Avoidance			X
21	Interest in highways avoidance			X
22	Interest in with ferries avoidance			X
23	Interest in seasonal rds. Avoidance			X
24	Interest in with time restrictions avoidance			X

25	Interest in country borders avoidance	X
----	---------------------------------------	---

**TABLE 5 LIST OF ROUTING FACTORS BY SOFTWARE**

From Table 8, it can be seen that the only 2 factors shared by the three software are the geographical location (meaning that the addresses of all locations at least should be in the same state) and all software optimized by time. Then, once the requirements of the Chinese holiday tourists have been explored, a software will be selected (See Chapter 6).

## CHAPTER 4 – RESEARCH METHOD AND DESIGN

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*This chapter presents a discussion on planning of this research project, research philosophy selected, methodology applied and how data was collected.*

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### **4.1. RESEARCH APPROACH**

As stated in chapter 1, this dissertation's primary objective is the identification of the routing factors when planning routes/itineraries for WA Chinese holiday tourists.

This study used secondary data from Tourism Research Australia (TRA) and websites that offer free route planning services. Last six years raw data was retrieved from TRA database. Routing factors information were retrieved from free web-based routing specialized software. Each routing factor found was contrasted with the statistic information from WA Chinese holiday tourists data from TRA.

#### **4.1.1. Caveat**

Personally, I believe that combining East Asian preferences into the Western businesses needs to be performed carefully; and the choice's made using these results into sophisticated business strategies can present a risk. Whenever necessary, the thesis mentions the limitation of the results provided. Significant differences between the holiday tourists and the other type of tourists can impact the application of the output of this study. These differences provide a clear opportunity for direct supply chains into specialization and design exclusive products and services for this market. Therefore, implementing the international visitor's Survey (IVS) information into a holiday tourist market would provide vital information for a niche.

It is also important to mention that other issues to be covered in this study include citing current local tourism politics and news related to this topic. Also, it identified the necessity of integrating the current local technology with the Chinese one and recognizes the importance of sentimental analysis through the different social media platforms used by Chinese people.

#### **4.1.2. Research methodology**

This study used both qualitative and quantitative methods. The qualitative approach provided introductory information, routing factors framework and a system to generate a prototype. Quantitative approach was used to identify WA Chinese holiday tourists determining factors for their satisfaction through better routes and itineraries

#### **4.2. RESEARCH PHILOSOPHY**

According to Lewis and Thornhill (2015), research means generating knowledge and research philosophy is the system of beliefs and assumptions which constitute the rationale whilst developing the thesis (can be consciously or unconsciously). There are three types of assumptions: Epistemological (from ordinary human knowledge), ontological (about facts found through research) and axiological (influences from personal values) (Saunders, Lewis and Thornhill 2015). Then, as seen in the next figure, the research philosophy contains assumptions and beliefs of these three types, however for businesses studies, there are five major philosophies. Positivism (observe social reality and then generalize), Critical Realism (explain what it is seen and experience), Interpretivism (believes that people are different from physical phenomena because they create meanings and therefore studies implications), Postmodernism (explore the role of language and power relations) and Pragmatism (believes that concepts only matter if they can support action) (Saunders, Lewis and Thornhill 2015). Figure 18 describes the Research Onion (Saunders, Lewis and Thornhill 2015):

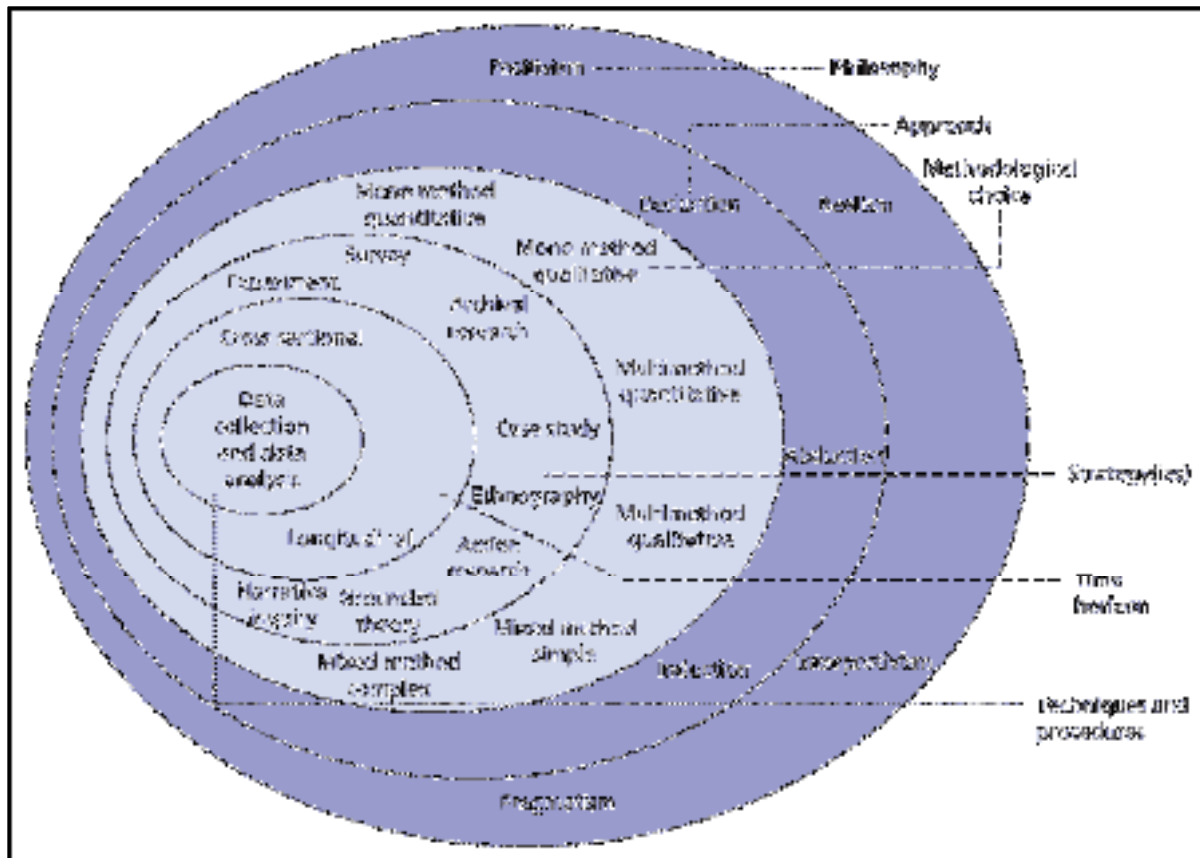


FIGURE 18 THE RESEARCH "ONION."

### 4.3. RESEARCH METHOD APPROACHES

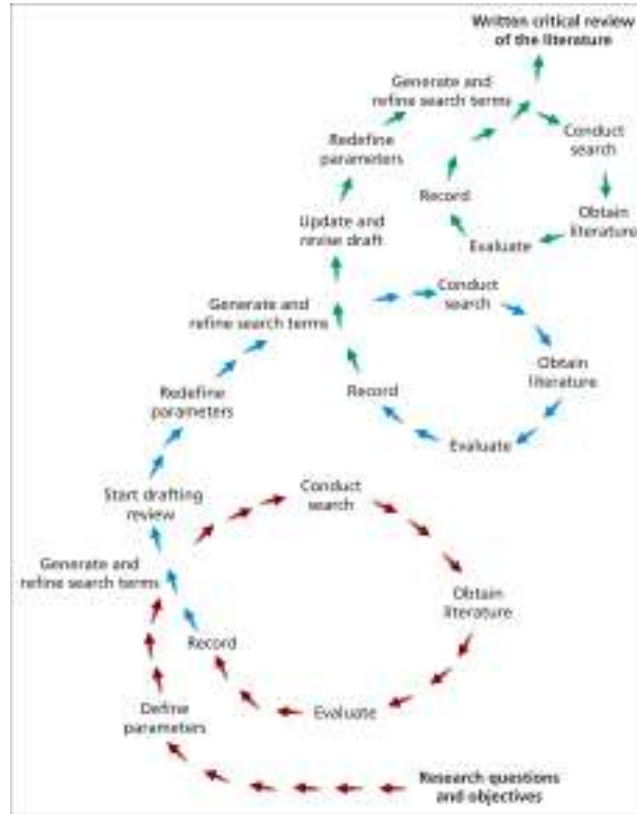
A study can also be classified in inductive or deductive (Hyde 2000). Deductive reasoning start with generalization and finish with accurate conclusions. On the other hand, inductive reasoning commence with actual data and ends with a generalized conclusion (Hyde 2000).

In this research, both were used. In the beginning, a deductive approach was used in order point out the importance of tourism in WA, general details about the Chinese holiday market and to determine the which factors are relevant when routing. Then, an inductive approach was used to suggest potential routes prototypes.

### 4.4. DATA COLLECTION

It is important to choose data collection methods that would enable researcher to collect data needed to answer the research questions (See 2.1.) (Foster 2014). As stated earlier in this chapter, this study used secondary data retrieved from TRA database and free online software.

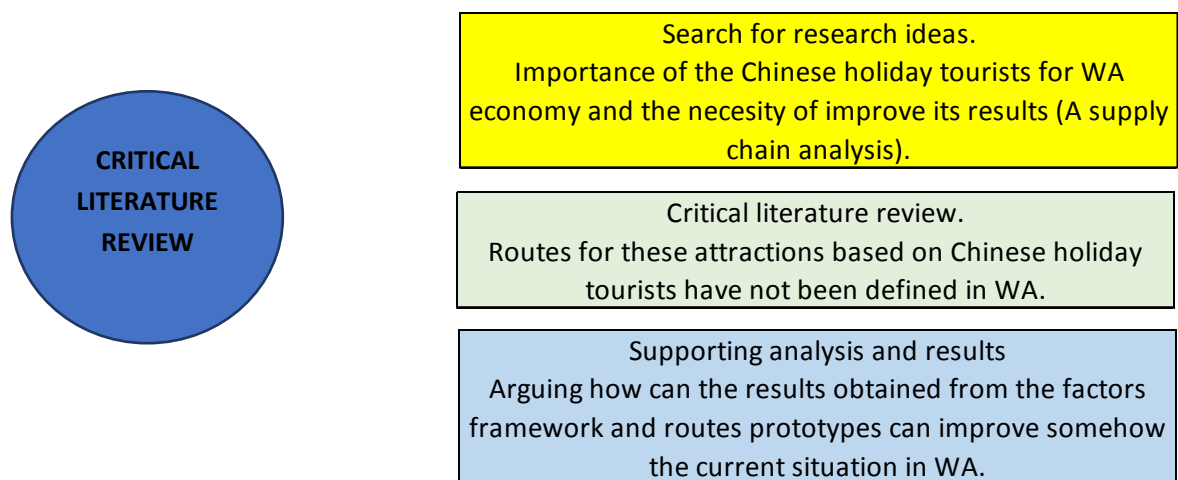
- Secondary data: Data collected for a different purpose than this study (including journals and raw data/databases) (Saunders, Lewis and Thornhill 2015).
- Primary data: New data collected for the specific a study's particular purpose(Saunders, Lewis and Thornhill 2015).



**FIGURE 19 CRITICAL CONSIDERATION OF THE LITERATURE (PROCESS)**

As can be perceived from the graph, the process doesn't represent a mere revision or summary of journals and reports. In this critical review, the arguments and theories can be considered biased, unclear and inconsistent and the correspondent justifications will be provided. Hence, if the analysis is performed correctly, new approaches and methods should arise (Corbin and Strauss 2008)

Considering the limited amount of publications of the WA's Chinese holiday market, the study also uses government reports and studies from Chinese tourists in other countries and news. As seen in the next graph, the concept of Critical literature review involves three main sub-processes.



**FIGURE 20 CRITICAL REVIEW OF LITERATURE SUB PROCESSES FOR THIS STUDY.**

It is also important to mention that the study retrieved information from the Curtin library databases and sometimes from Google Scholar.

#### **4.4.1. International Visitors Survey (IVS)**

This survey is applied every year to 40,000 tourists aged from 15 years and over, whom stay in Australia for short term periods. The survey samples were obtained from tourists in the airport lounges of Australia's biggest cities (Tourism Research Australia 2017).

Each questionnaire contains around 100 tourism related questions such questions about place of residence, group tours, travel party, transportation and accommodation details, expenditure, activities, and preferences.

#### **4.5. QUALITY (RELIABILITY AND VALIDITY)**

To increase the reliability of this study, some measures have been considered:

- a) Use of information from government agency (i.e. TRA database) as a primary source for analysis of WA's Chinese holiday visitors.
- b) Use of useful free online routing software (that is also commonly used and paid by users through the web).
- c) Documenting all filters used in the extraction of the information (Captures)



d) Restriction of the use of newspaper information to only those published through Curtin Library (some newspapers have merely entertainment purposes and are not suitable for academic purposes).

## CHAPTER 5 WA CHINESE HOLIDAY TOURISTS' ANALYSIS: FRAMEWORK

*This chapter describes the specific steps taken to retrieve the data of the government agency. Then, it explore the different information about the characteristics of the WA holiday tourists to obtain specific knowledge about how to customize tourism routes for them. This chapter also point out the most frequently visited places as well as the places where tourists spent more time.*

As mentioned in Chapter 1, the lack of specific knowledge related to the Chinese holiday tourists in WA requires a particular framework which allows the audience interested or involved in tourism supply chains to customize their businesses according the nexesities of the Chinese market.

### 5.1. QUERY

Therefore, the present study will use information from the Internataion Visitors Survey (IVS) database and search characteristics of the Chinese visitors who visit WA. Firstly, Figure 21 will describe the steps taken to retrieve the information about Chinese tourists.

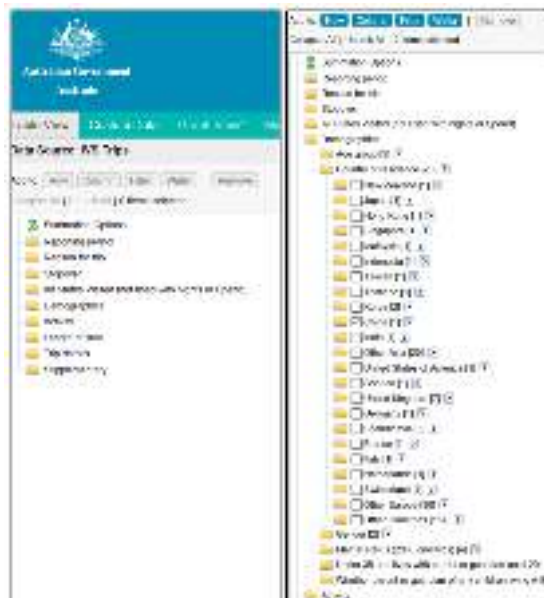


FIGURE 21 SORTING ONLY CHINESE HOLIDAY VISITORS IN WA

The initial procedure was to filter out the results from years 2010-2016 (All quarters) based on the field: WA (Stopover State/Region/SA2 category) as seen in the next figure:

Cell count: 16 (2 x 8 x 1) total, 2 (2 x 1 x 1) displayed.

Stopover State/Region/SA2			Western Australia		Total
Country of residence	Main reason for trip	Calendar year			
China	Holiday	2010-2016	66,000	66,000	

\* Calendar year - Total includes: 2010-2016  
 \* Calendar year - 2010-2016 includes: 2012, 2011, 2010, 2013, 2014, 2015 and 2016  
[more](#)  
 For further information see [Data Confidentiality](#)

FIGURE 22 SELECTING INFORMATION (HOLIDAY,CHINA.2010-2016,WA)

Subsequently, information was downloaded from the tables “Sample” and “Stopover sample” only:

Table Name	Description
TABLE_01	Table 01
TABLE_02	Table 02
TABLE_03	Table 03
TABLE_04	Table 04
TABLE_05	Table 05
TABLE_06	Table 06
TABLE_07	Table 07
TABLE_08	Table 08
TABLE_09	Table 09
TABLE_10	Table 10
TABLE_11	Table 11
TABLE_12	Table 12
TABLE_13	Table 13
TABLE_14	Table 14
TABLE_15	Table 15
TABLE_16	Table 16
TABLE_17	Table 17
TABLE_18	Table 18
TABLE_19	Table 19
TABLE_20	Table 20
TABLE_21	Table 21
TABLE_22	Table 22
TABLE_23	Table 23
TABLE_24	Table 24
TABLE_25	Table 25
TABLE_26	Table 26
TABLE_27	Table 27
TABLE_28	Table 28
TABLE_29	Table 29
TABLE_30	Table 30
TABLE_31	Table 31
TABLE_32	Table 32
TABLE_33	Table 33
TABLE_34	Table 34
TABLE_35	Table 35
TABLE_36	Table 36
TABLE_37	Table 37
TABLE_38	Table 38
TABLE_39	Table 39
TABLE_40	Table 40
TABLE_41	Table 41
TABLE_42	Table 42
TABLE_43	Table 43
TABLE_44	Table 44
TABLE_45	Table 45
TABLE_46	Table 46
TABLE_47	Table 47
TABLE_48	Table 48
TABLE_49	Table 49
TABLE_50	Table 50
TABLE_51	Table 51
TABLE_52	Table 52
TABLE_53	Table 53
TABLE_54	Table 54
TABLE_55	Table 55
TABLE_56	Table 56
TABLE_57	Table 57
TABLE_58	Table 58
TABLE_59	Table 59
TABLE_60	Table 60
TABLE_61	Table 61
TABLE_62	Table 62
TABLE_63	Table 63
TABLE_64	Table 64
TABLE_65	Table 65
TABLE_66	Table 66
TABLE_67	Table 67
TABLE_68	Table 68
TABLE_69	Table 69
TABLE_70	Table 70
TABLE_71	Table 71
TABLE_72	Table 72
TABLE_73	Table 73
TABLE_74	Table 74
TABLE_75	Table 75
TABLE_76	Table 76
TABLE_77	Table 77
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TABLE_79	Table 79
TABLE_80	Table 80
TABLE_81	Table 81
TABLE_82	Table 82
TABLE_83	Table 83
TABLE_84	Table 84
TABLE_85	Table 85
TABLE_86	Table 86
TABLE_87	Table 87
TABLE_88	Table 88
TABLE_89	Table 89
TABLE_90	Table 90
TABLE_91	Table 91
TABLE_92	Table 92
TABLE_93	Table 93
TABLE_94	Table 94
TABLE_95	Table 95
TABLE_96	Table 96
TABLE_97	Table 97
TABLE_98	Table 98
TABLE_99	Table 99
TABLE_100	Table 100

FIGURE 23 SELECTING INFORMATION RELATED TO STOPOVERS ONLY

Flight Number	Origin	Destination	Stopover Status
1	...	...	1
2	...	...	1
3	...	...	1
4	...	...	1
5	...	...	1
6	...	...	1
7	...	...	1
8	...	...	1
9	...	...	1
10	...	...	1
11	...	...	1
12	...	...	1
13	...	...	1
14	...	...	1
15	...	...	1
16	...	...	1
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93	...	...	1
94	...	...	1
95	...	...	1
96	...	...	1
97	...	...	1
98	...	...	1
99	...	...	1
100	...	...	1

FIGURE 24 DOWNLOADING STOPOVER INFORMATION

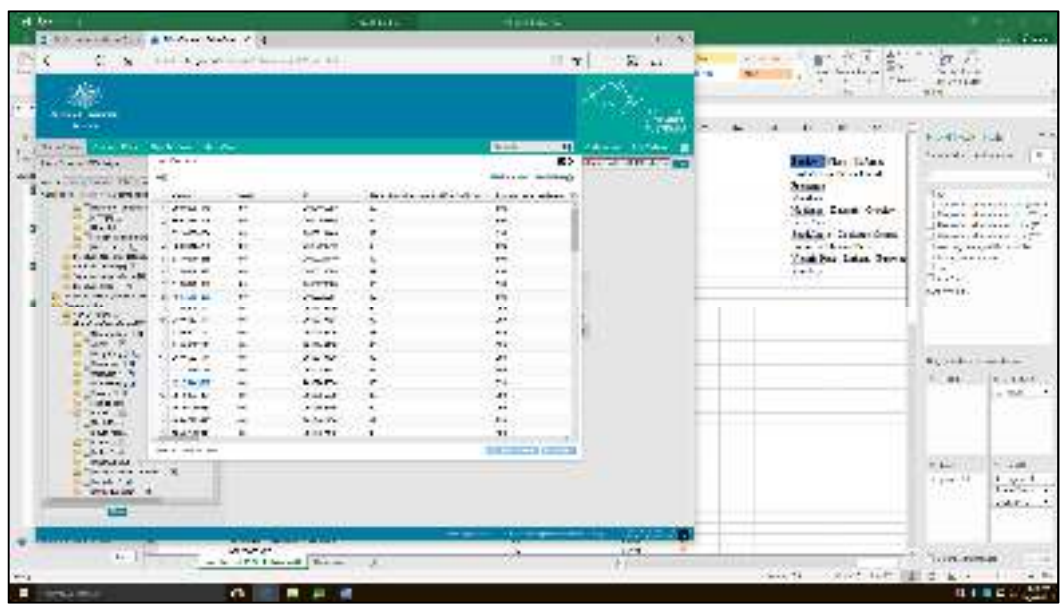


FIGURE 25 DATA EXTRACTION EVIDENCE

Finally, an excel document was downloaded with 509 raw:

A	B	C
234.3613	0	2.02E+09
357.281	0	2.02E+09
49.2421	0	2.02E+09
65.1673	0	2.02E+09
65.1673	0	2.02E+09
285.0206	0	2.02E+09
285.0206	0	2.02E+09
285.0206	0	2.02E+09
285.0206	0	2.02E+09
285.0206	0	2.02E+09
285.0206	0	2.02E+09
285.0206	0	2.02E+09
285.0206	0	2.02E+09
285.0206	0	2.02E+09
405.5496	0	2.02E+09
405.5496	0	2.02E+09
405.5496	0	2.02E+09
405.5496	0	2.02E+09
405.5496	0	2.02E+09
405.5496	0	2.02E+09
405.5496	0	2.02E+09
252.8937	0	2.02E+09
252.8937	0	2.02E+09
252.8937	0	2.02E+09
252.8937	0	2.02E+09

unitRecord (16)  
Average: 263.2697885 Count: 509

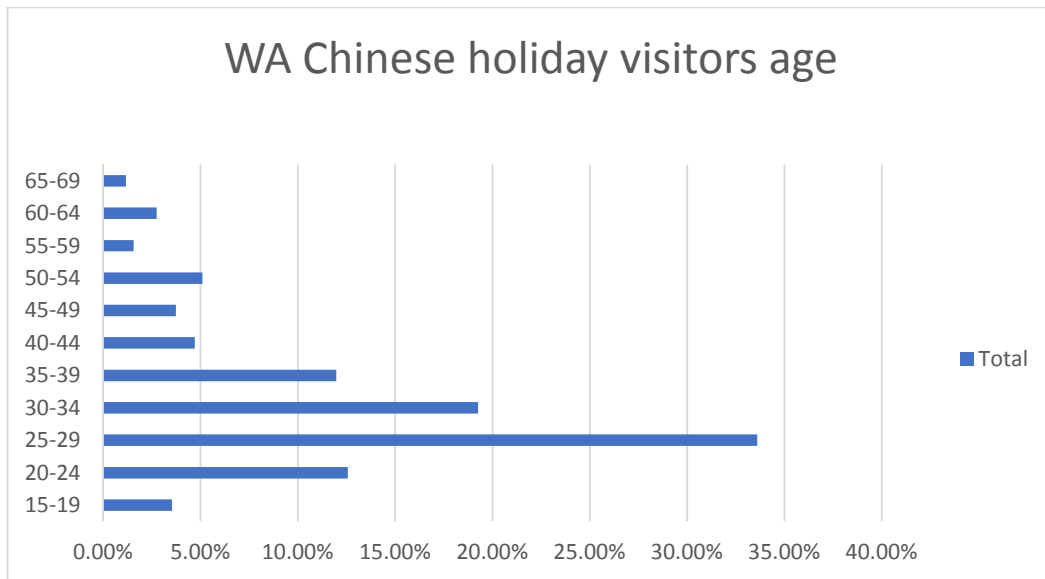
FIGURE 26 EVIDENCE OF THE INFORMATION INTEGRITY

## 5.2. BUDGET ANALYSIS

Chinese tourists spend in average 4,124 AUD and stay 9.1 days, which means that they spend approximately 454 AUD per day (See 3.1.1.2.). Each route depending on its duration should not exceed this average budget.

## 5.3. AGE OF TOURISTS

The prevalent range of tourists is from 20 to 40 years old (Figure 27). Together this range represents almost 77% of the total pool of tourists.



**FIGURE 27 VISITORS AGE**

**5.4. ARRIVAL ANALYSIS**

City of Arrival	Proportion
Perth	79.37%
Sydney	9.23%
Melbourne	8.06%
Brisbane	2.75%
Adelaide	0.59%
Grand Total	100.00%

**TABLE 6 WA’S VISITOR’S CITY OF ARRIVAL IN AUSTRALIA**

From the previous table, we can see that most of the Perth visitors start their journey in Australia in Perth.

City of Arrival	Proportion
3	18.27%
1	17.49%
4	15.91%
6	12.57%
7	10.02%

5	7.07%
2	6.68%
8	3.93%
10	1.96%
11	1.77%
9	1.57%
19	1.38%
13	1.38%
Grand Total	100.00%

**TABLE 7 PERTH VISITORS' NUMBER OF STOPS IN AUSTRALIA**

From the previous table, it visible that around 17% of Perth visitors only stay in Perth.

Stopovers in Australia	Proportion
Perth	100.00%
1	21.29%
3	19.06%
4	14.85%
6	12.13%
7	10.64%
5	6.44%
2	6.19%
8	4.21%
10	2.48%
9	1.98%
11	0.74%
Grand Total	100.00%

**TABLE 8 NUMBER OF STOPS IN AUSTRALIA OF VISITORS THAT ARRIVED IN PERTH**

**Important:** More than 1 in 5 tourists that come to Australia, arriving in Perth, will only stay in Perth.

## 5.5. LENGTH OF STAY ANALYSIS

In order to determine the duration of stay of Chinese Holiday tourists in WA, the study started focusing on the tourists that arrived in Australia via WA and did not visit other Australian states.

City of Arrival	Sum of Length of stay in state or territory	Sum of Length of stay in Australia	Proportion
<b>Perth</b>	8963	9897	91%
<b>1</b>	1643	1643	100%
<b>2</b>	245	325	75%
<b>3</b>	1140	1305	87%
<b>4</b>	978	1194	82%
<b>5</b>	672	710	95%
<b>6</b>	647	687	94%
<b>7</b>	1930	2074	93%
<b>8</b>	1483	1531	97%
<b>9</b>	100	206	49%
<b>10</b>	110	168	65%
<b>11</b>	15	54	28%
<b>Grand Total</b>	8963	9897	91%

**TABLE 9 LENGTH OF STAY FOR ARRIVED IN PERTH TOURISTS BY NUMBER OF STOPS**

Tourists that come only to Perth were found to spend more time there compared to other tourists that come to Australia (See Table 12). Nevertheless, the details (nights spent by City or Region) of other stops in Australia were not completely available in the database. If this information had been available, it would have been possible to generate itineraries only for the tourists with the most frequent number of nights in Perth/WA.

From Table 13 (See Appendix 2), it is visible that the majority of the tourists (60%) that only visit Perth prefer to stay only between 4 to 10 days. Thus, this means that tourists have less than three days (2 nights) at minimum or less than 11 days (10 nights at maximum) to complete all their planned activities.

Additionally, Table 14 illustrates the length of stay of the Chinese holiday visitors by number of stops in state.

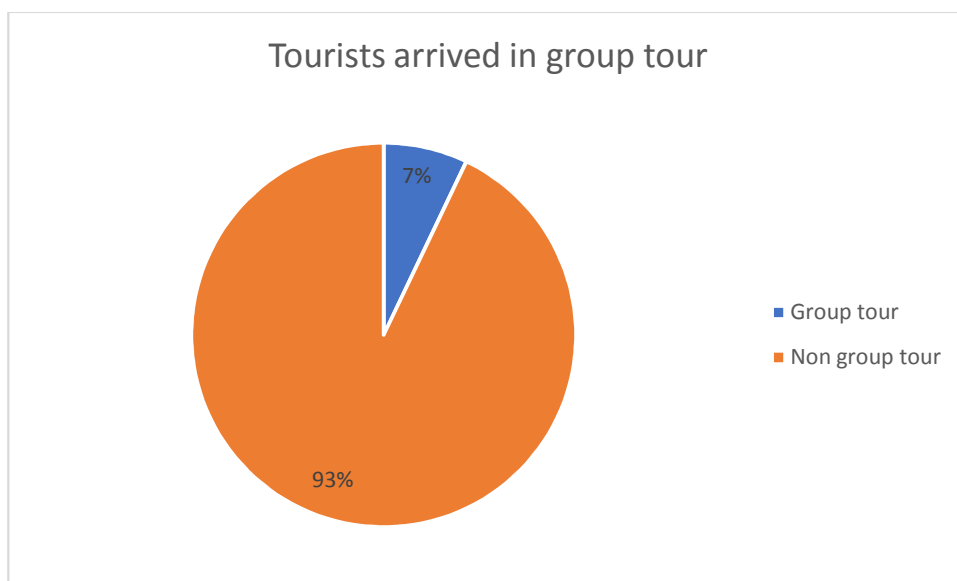


Number of stops in State	Average of Length of stay in state or territory
<b>Perth</b>	22.18564356
<b>1</b>	19.10465116
<b>2</b>	9.8
<b>3</b>	14.80519481
<b>4</b>	16.3
<b>5</b>	25.84615385
<b>6</b>	13.20408163
<b>7</b>	44.88372093
<b>8</b>	87.23529412
<b>9</b>	12.5
<b>10</b>	11
<b>11</b>	5
<b>Grand Total</b>	<b>22.18564356</b>

**TABLE 10 AVERAGE LENGTH OF STAY IN WA**

### 5.6. PREVIOUS USE OF GROUP TOUR / INDEPENDENT TRAVELER

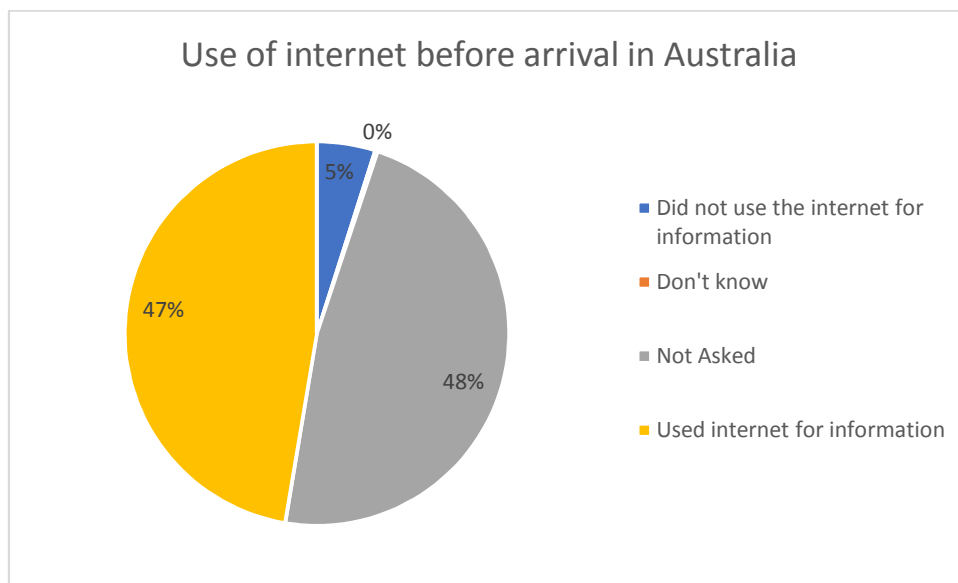
**Important:** When designing their publicity strategies, companies should know if the tourist prefers to use previously arranged group tours. The next graph shows that WA tourists don't like to come on group tours. Hence, the study recommends that efforts should not be made to engage tour companies in China.



**FIGURE 28 DISTRIBUTION OF TOURISTS THAT ARRIVED ON GROUP TOUR**

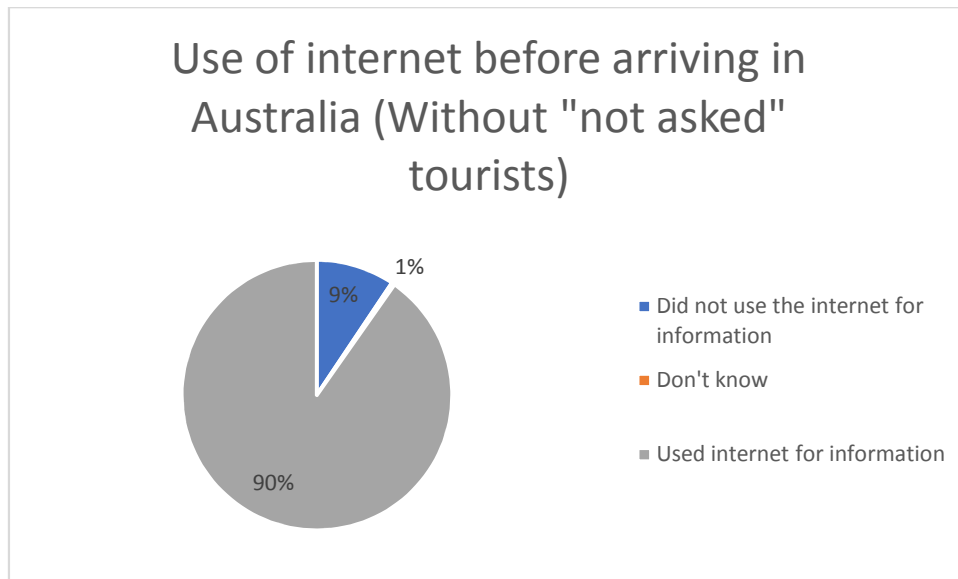
### 5.7. PREVIOUS USE OF INTERNET ANALYSIS

In order to determine if an approach made via the internet is relevant when approaching Chinese Holiday Tourists, it is important to determine whether they used internet applications before coming to Perth. Apparently, almost half of the surveyed tourists researched Australia online prior to travelling. This is a significant factor, as it is well known that in China, the internet platforms of Facebook and Google are forbidden.



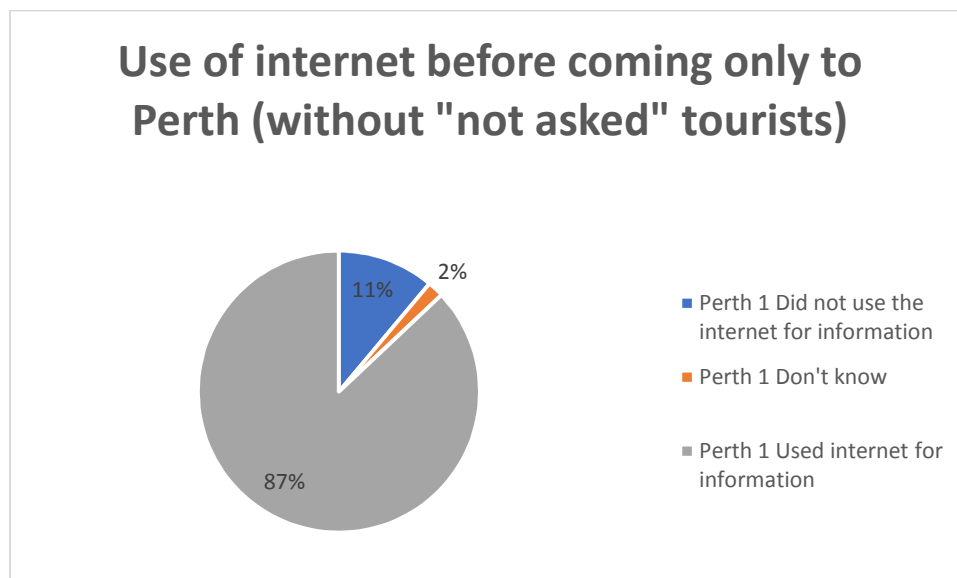
**FIGURE 29 VISITORS WHO USED THE INTERNET BEFORE THEIR AUSTRALIA TRIP**

If we filter out the individuals who were not asked to answer about their use of internet before arriving Australia, the result is the following:



**FIGURE 30 VISITORS WHO USED THE INTERNET BEFORE COMING TO AUSTRALIA (EXCLUDING THOSE NOT ASKED)**

Approximately, nine in ten visitors searched information about Australia online before leaving China.



**FIGURE 31 USE OF INTERNET BEFORE COMING ONLY TO PERTH**

**Important:** Finally, to be as precise as possible, 87% of Chinese Holiday tourists who visited only Perth searched for information about this city online before starting their trip. Therefore, it is highly important to promote WA and Perth tourist destinations through the Chinese social media.

## 5.8. PEAK PERIOD OF ARRIVAL

Based on an overall Australia analysis of the WA Chinese holiday tourists, they mainly arrived in the March quarter.

Quarter in Year	Proportion
December quarter	23.58%
June quarter	22.40%
March quarter	28.29%
September quarter	25.74%
Grand Total	100.00%

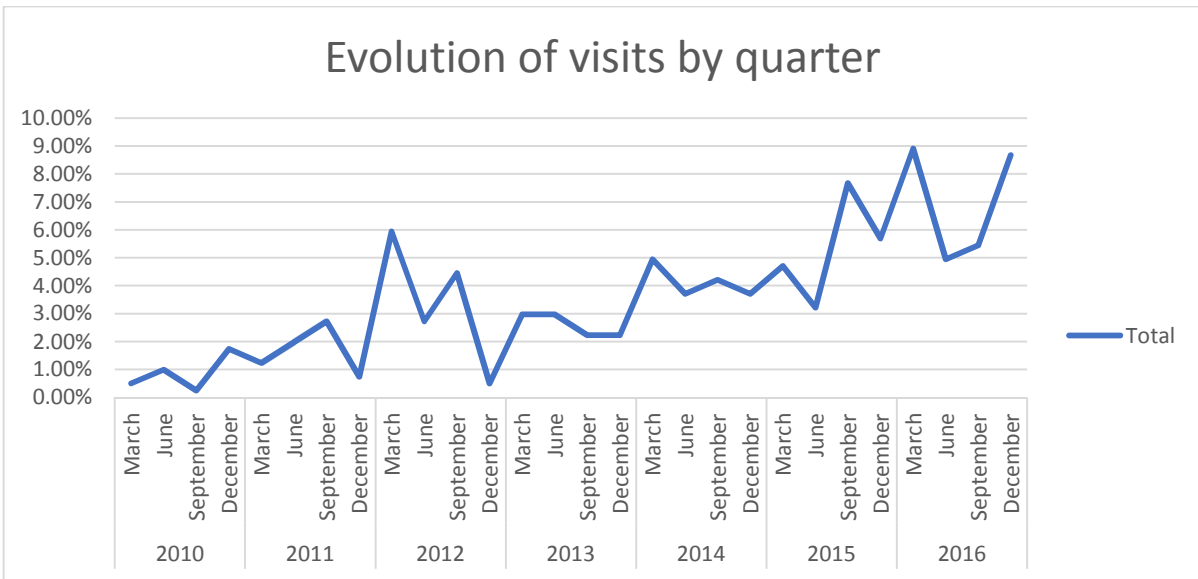
TABLE 11 QUARTER WHERE WA CHINESE HOLIDAY VISITORS VISITED AUSTRALIA

As seen in Chapter 3, most of the WA Chinese Holiday tourists that arrive in WA do so through Perth. Therefore, considering Perth as the “City of Arrival”, the results will avoid visitors who visited Perth but entered to Australia through other City. Then, the arrival analysis will be more precise. The next table proves that the March quarter is the peak period.

Quarter in Year	Proportion
Perth	100.00%
December quarter	23.27%
June quarter	20.54%
March quarter	29.21%
September quarter	26.98%
Grand Total	100.00%

TABLE 12 QUARTER WHEN WA CHINESE HOLIDAY VISITORS VISITED FIRSTLY PERTH

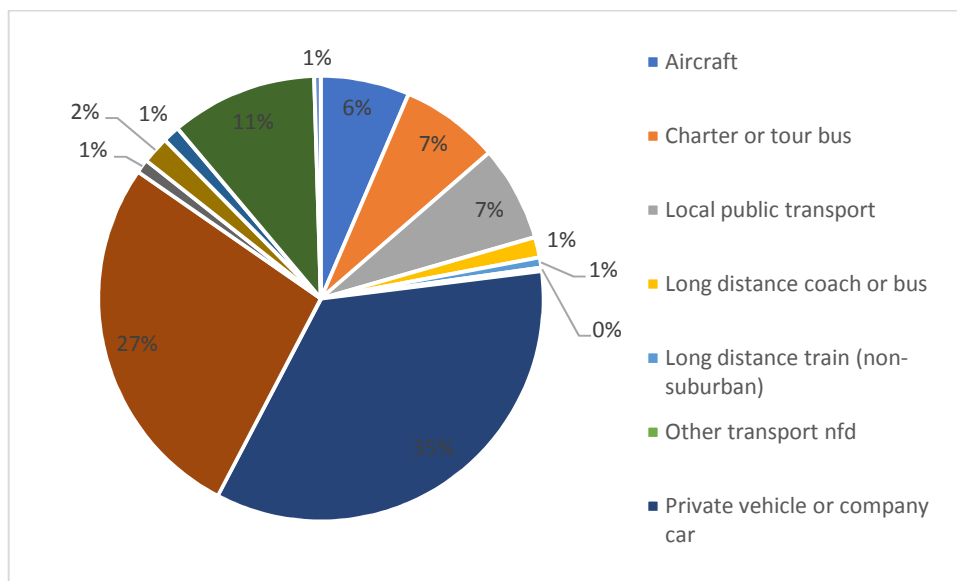
To confirm and review the evolution of visitors in Perth, Table 17 will be presented. There we can perceive that since 2012, there is a trend towards rising numbers between the December and March quarters. Note: The graph only considers Chinese holiday visitors who entered Australia through Perth.



**TABLE 13 EVOLUTION OF VISITS BY QUARTER (ONLY VISITORS WHO ARRIVED AUSTRALIA THROUGH PERTH)**

**5.9. METHOD OF TRANSPORTATION**

As one of the primary purposes of this study is to determine the best route, it is also noteworthy that tourists like to drive independently in Perth. Rental and private car use together represent more than 50% of the preferred mode of transport,. The use of tour buses is not frequent, nor is the use of public transport (See next graph).



**FIGURE 32 METHODS OF TRANSPORTATION**

### 5.10. ACCOMODATION

Almost all of the WA Chinese holiday tourists stay more than one night in Perth and therefore, they certainly need accommodation. Figure 33 illustrates their accommodation preferences (Chinese holiday tourists):

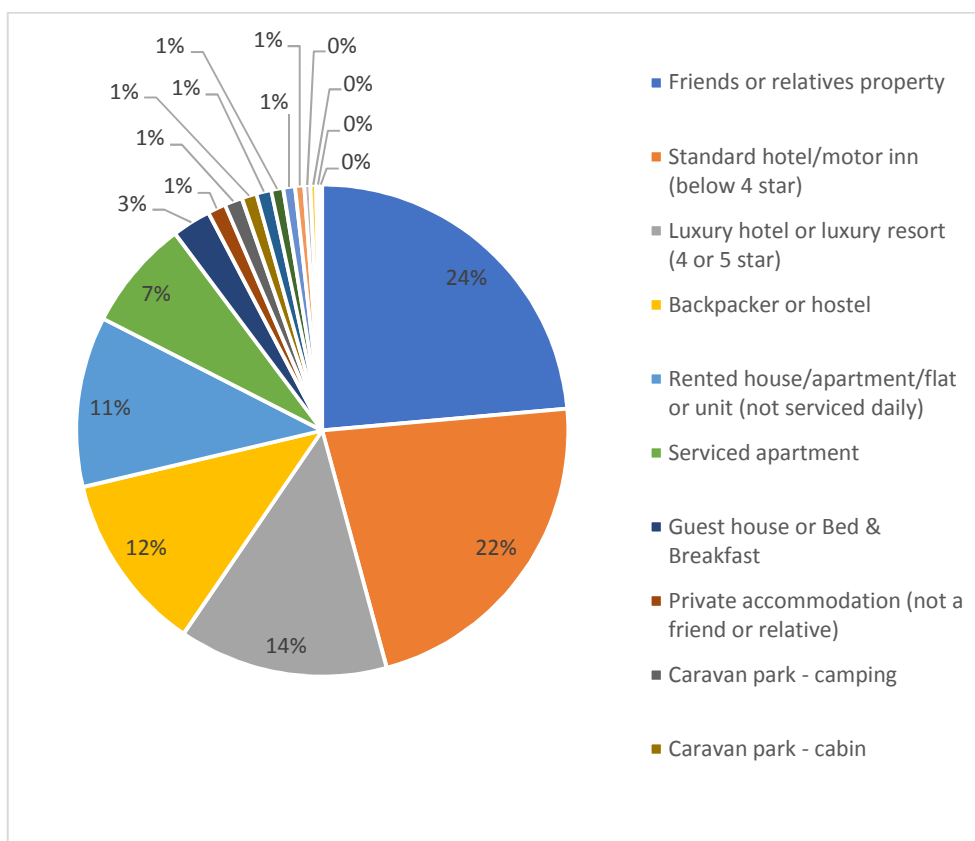
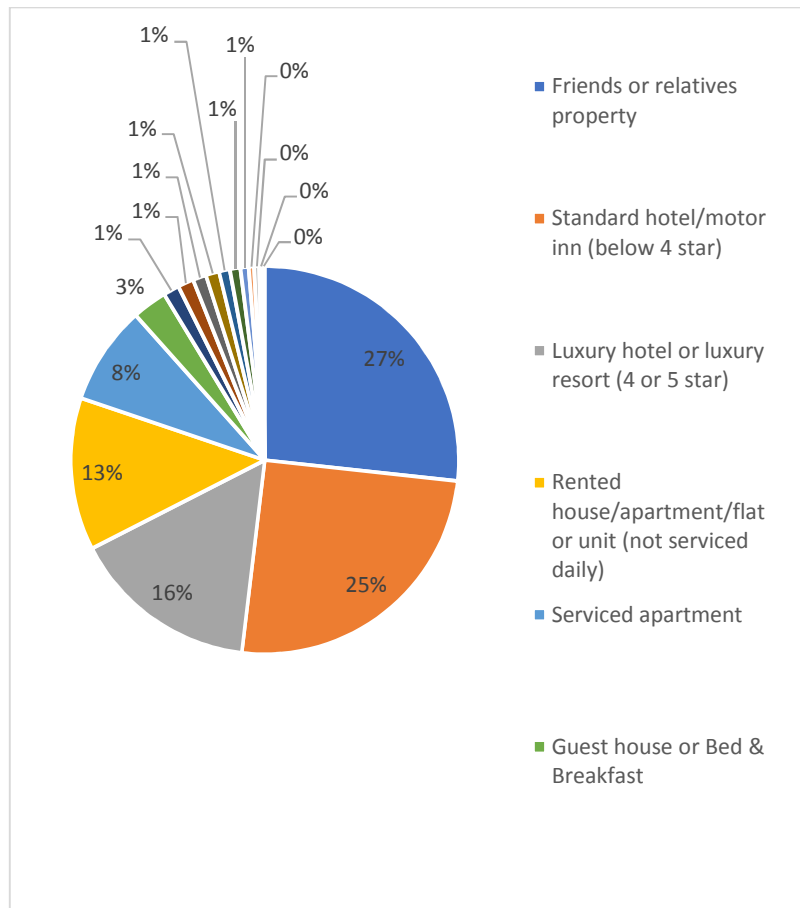


FIGURE 33 ACCOMMODATION PREFERENCES

Considering that these targeted tourists are not mainly backpackers, the pie chart illustrates that most of the tourists prefer to stay in hotels, with friends or relatives, luxury hotels (18%) and rent houses/flats.

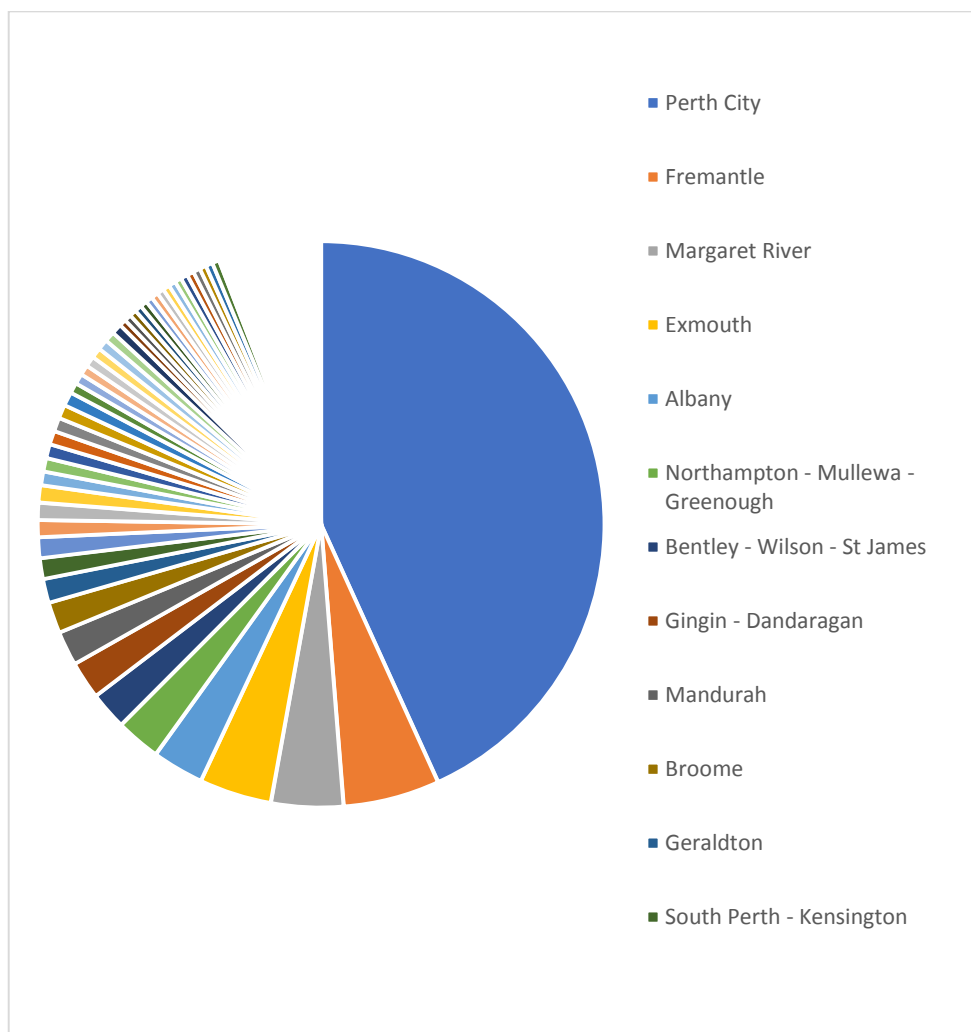


**FIGURE 34 TYPE OF ACCOMMODATION FOR NON-BACKPACKERS**

## **5.11. TOP STOPOVERS IN WA ANALYSIS**

### **5.11.1. Popular Stopovers**

The IVS database provides information about the stopovers from each interviewed (See Appendix 2 Table 18). The next graphs will start exploring the most popular stopovers or destinations.



**FIGURE 35 STOPOVERS WA – OVERVIEW**

**5.11.2. Top tourist destinations by the length of stay**

It is also important to identify the best locations for accommodation facilities. In this vein, the next table is ranked in order of stopovers where tourists spend more nights (See Annex 3 Table 19).

**5.11.3. Categorization of tourist destinations by regions.**

There are five main regions in Australia to explore (See table 20): Coral Coast, Golden Outback, North West, Perth and South West (WA Holiday Guide Ltd Pty 2017).

Waholidayguide.com is a website connects all tourist destinations business in one website (accommodation, car rental, restaurants, tours, etc.) (WA Holiday Guide Ltd Pty 2017). The next table shows which are the main tourist destinations for each WA region.



Coral Coast	Golden Outback	North West	Perth	South West
Carnarvon	Esperance	Broome	Fremantle	Albany
Cervantes	Hyden wave rock	Derby	Joondalup	Augusta
Coral Bay	Kalgoorlie	Karratha	Lancelin	Bridgetown
Exmouth	Kambalda	Kununurra	Mandurah	Bunbury
Geraldton	Outback way	Newman	Northam	Busselton
Kalbarri		Port hedland	Perth beach	Denmark
Shark Bay			Perth City	Dunsborough
			Perth Hills	Manjimup
			Rockingham	Margaret River
			Swan Valley	Nannup
			Toodyay	Pemberton
			York	Walpole
				Yallingup

Table 14 Tourist destinations by region sample. Adapted from (WA Holiday Guide Ltd Pty 2017)

Then, based on the IVS, each of these areas has the next highest amount of stopovers (From the Chinese holiday visitors):

Row Labels	Sum of Counter	Region
Exmouth	16	Coral Coast
Northampton - Mullewa - Greenough	10	Coral Coast
Gingin – Dandaragan	9	Coral Coast
Geraldton	7	Coral Coast
Morawa	2	Coral Coast

Table 15 Top 5 tourist destinations in Coral Coast by quantity of visitors

Row Labels	Sum of Counter	Region
Esperance	3	Golden Outback
Esperance Region	1	Golden Outback
Kalgoorlie	2	Golden Outback
Kulin	2	Golden Outback
Leinster - Leonora	1	Golden Outback

Table 16 Top 5 tourist destinations in Golden Outback by quantity of visitors

Row Labels	Sum of Counter	Region
Broome	4	North West

Table 17 Top 5 tourist destinations in North West by quantity of visitors

Top 10 from Perth

Row Labels	Sum of Counter	Region
Perth City	220	Perth

Fremantle	28	Perth
Margaret River	21	Perth
Bentley - Wilson - St James	11	Perth
Mandurah	10	Perth
South Perth - Kensington	6	Perth
Subiaco - Shenton Park	6	Perth
Nedlands - Dalkeith - Crawley	5	Perth
Busselton	5	Perth
Victoria Park - Lathlain - Burswood	5	Perth

Table 18 Top 5 tourist destinations in Perth City by quantity of visitors

Row Labels	Sum of Counter	Region
Albany	14	South West
Bunbury	3	South West
Busselton	5	South West
Margaret River	19	South West
Pemberton	4	South West

Table 19 Top 5 tourist destinations in South West by quantity of visitors

#### 5.11.4. Stopovers' nights

In order to have an approximate idea of how long a tourist should spend in each tourist destination, region based analysis should be performed (as performed in the following tables):

**Note:** The purpose of pointing out the average number of nights per tourist destination is to have an idea of the facilities that visitors will encounter when they reach these tourist destinations (accommodation, food, internet connection, etc.)

#### A) Coral Coast

Stopover/Tourist destination	Average of number of nights	Proportion of total nights spent there
Exmouth	2.75	50%
Gingin - Dandaragan	1.1	26.14%
Northampton - Mullewa - Greenough	2.3	3.41%
Morawa	1.5	9.09%
Geraldton	1.14	11.36%

Table 20 Top 5 tourist destinations in Coral Coast by number of nights

#### B) Golden Outback

Stopover/Tourist destination	Average of number of nights	Proportion of total nights spent there
Esperance	1.66667	26.32%
Esperance Region	1	5.26%
Kalgoorlie	5	52.63%
Kulin	1	10.53%
Leinster - Leonora	1	5.26%

Table 21 Top 5 tourist destinations in Golden Outback by number of nights

### C) South West

Stopover/Tourist destination	Average of number of nights	Proportion of total nights spent there
Albany	4.928571429	45.39%
Bunbury	1.333333333	2.63%
Busselton	3.8	12.50%
Margaret River	2.947368421	36.84%
Pemberton	1	2.63%

Table 22 Top 5 tourist destinations in South West by number of nights

### D) North West

Stopover/Tourist destination	Average of Stopover number of nights	Proportion of total nights spent there
Broome	3.5	100%

Table 23 Top 5 tourist destinations in North West by number of nights

### E) Perth

Range of Age	Average number of nights	Proportion of total nights spent there
Perth City	8.354545455	43.49%
Victoria Park - Lathlain - Burswood	47.2	5.58%
Cannington - Queens Park	54.75	5.18%
Hamilton Hill	53	3.76%

Bentley - Wilson - St James	12.18181818	3.17%
Murdoch - Kardinya	97	2.30%
Applecross - Ardross	21.5	2.04%
Leeming	28	1.99%
Fremantle	2.928571429	1.94%
Greenwood - Warwick	76	1.80%

Table 24 Top 5 tourist destinations in Perth by number of nights

## CHAPTER 6 – SOFTWARE SELECTION

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*The present Chapter will select the most suitable software to model routes for the Chinese holiday tourists based on information of Chapters 3 and 5.*

---

Based on the routing factors identified in Chapter 3.6 and the Chinese characteristics analyzed in Chapter 5 a routing application should be selected to attend these customer requirements. (See Appendix 3 Table 31).

Based on routing factors and WA Chinese tourists attraction of interest/preference (See Appendix 3 Table 31), Myrouteonline software was selected to demonstrate how to generate touring routes for WA Chinese tourists (see Table 32).

Software	Matched factors
Myrouteonline	14/15
Speedroute	5/15
Mapquest	6/15

TABLE 25 SOFTWARE SELECTION

## CHAPTER 7 – ROUTES GENERATION AND OTHER SUPPLY CHAIN APPLICATIONS

---

*The study will proceed to generate some prototype routes based on the tourist destinations obtained by region in 5.11.3 and the software selected in Myrouteonline. However, 7.1. will cover some general constrains applied in in the mentioned software to generate routes.*

*Also, through this chapter, all the findings that arose from previous chapters will be summarised and discussed. Then, some findings related to supply chain integration through websites and demand satisfaction will be presented*

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### 7.1.GENERAL CONSTRAINS

**Note 1:** It is important to be aware of the software limitation regarding the duration for each tourist destination. The IVS provides the number of nights per stopover (tourist destination) but not the number of hours (Example: If a tourists visited a location for only one hour the survey would consider it as one night). Therefore the routes will just describe the best options based on transportation time.

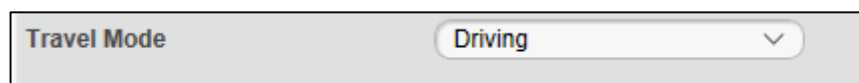
**Note 2:** All routes include 30 minutes lunch time at 1 pm.



The image shows a configuration box for a lunch break. On the left, it says "Lunch Break". To the right, there is a numeric input field containing "30", followed by the text "min., between", another numeric input field containing "13:00", the text "and", and a final numeric input field containing "13:30".

FIGURE 36 LUNCH TIME CONFIGURATION - MYROUTEONLINE

**Note 3.** As seen in Chapter 4, the primary mean of transportation is driving a car and Chinese holiday tourists are mostly located in Perth City. Therefore, the routes will include Perth City as a start point.



The image shows a configuration box for travel mode. On the left, it says "Travel Mode". To the right, there is a dropdown menu with "Driving" selected and a downward-pointing arrow.

FIGURE 37 TRAVEL MODE CONFIGURATION - MYROUTEONLINE

**Note 4.** The free trial of Myrouteonline only includes 6 locations. It does not allow Perth City to be used as both a starting and ending point because Perth end point would be considered as a seventh location destination which is not allowed ( See Figure 38)

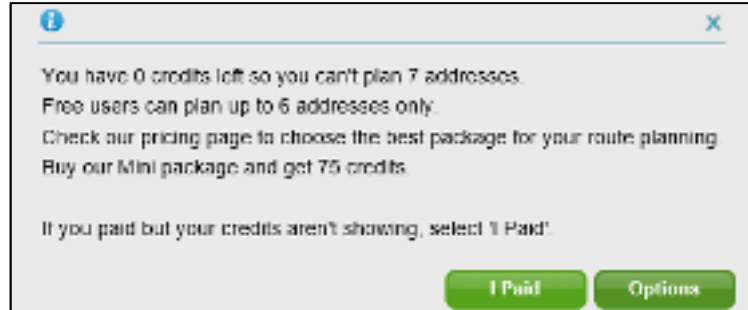


FIGURE 38 MYROUTEONLINE'S RESTRICTION MESSAGE

**Note 5.** It is definitely not reasonable to allow more than 8 hrs per day, as the software is only considering travel times, a maximum of 8 hrs. and 30 mins (including 30 mins lunch) will be used.

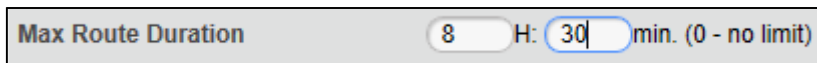


FIGURE 39 MAX ROUTE DURATION CONFIGURATION - MYROUTE ONLINE

**Note 6:** All trips start at 7 am.

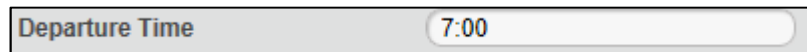


FIGURE 40 STARTING TIME CONFIGURATION - MYROUTEONLINE

**Note 7:** The system can generate all routes required for achieving the best result.

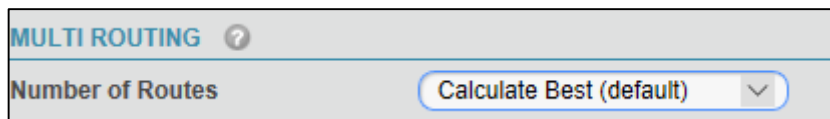


FIGURE 41 NUMBER OF ROUTES CONFIGURATION - MYROUTEONLINE

**Note 8:** All routes use the balance of time and distance option.

**OPTIMIZATION OPTIONS** ?

Goal Balance time and distance ▼

FIGURE 42 OPTIMIZATION GOALS CONFIGURATION - MYROUTEONLINE

**Note 9:** The system is using the Pick Nearest option first (Based on the Start Address)

Route Beginning Pick Nearest First ▼ only if Start Address is set.

FIGURE 43 ROUTE BEGINNING CONFIGURATION - MYROUTEONLINE

**Note 10:** In order to enjoy the tourist destinations and not use the entire day for traveling, the days are limited to 12 hrs.

**EXTENDED TRIPS (OVERNIGHT)** ?

Hours per Day (overnight stay)

FIGURE 44 HOURS PER DAY CONFIGURATION - MYROUTEONLINE

## 7.2.CORAL COAST ROUTE

The next figure presents the best route generated for this group’s tourist destinations:

All Routes				
Route #1				
Route #2				
Route #1: 6 addresses, duration 7:10, distance 590.87 km				
<input type="checkbox"/>	No. Address	Time	Srv.	Distance Size
<input type="checkbox"/>	1 Perth WA, Australia	7:00am (+0:00)	0:00	0.00 (+0.00)
<input type="checkbox"/>	2 Gingin WA 6503, Australia	8:13am (+1:13)	0:00	92.99 (+92.99)
<input type="checkbox"/>	3 Morawa WA 6623, Australia	11:17am (+3:04)	0:00	376.25 (+283.26)
<input type="checkbox"/>	4 ** Lunch Break **		0:30	
<input type="checkbox"/>	5 Geraldton WA 6530, Australia	1:31pm (+1:44)	0:00	538.90 (+162.65)
<input type="checkbox"/>	6 Northampton WA 6535, Australia	2:10pm (+0:39)	0:00	590.87 (+51.97)

FIGURE 45 CORAL COAST ROUTE - DAY 1



Figure 45 illustrates that it is convenient to consider accommodation and restaurants facilities in Northampton rather than in Morawa or Geraldton based on Chinese visitors preferences.

Figure 46 illustrates that Northampton not only requires accommodation spaces with breakfast options. Exmouth is a tourist destination where tourists will spend at least one night and also requires high quality tourist destinations and restaurants.

All Routes					
Route #1					
Route #2					
Route #2: 3 addresses, duration 8:09, distance 781.58 km					
<input type="checkbox"/> No.	Address	Time	Srv.	Distance	Size
<input type="checkbox"/> 1	Northampton WA 6535, Australia	7:00am (+0:00)	0:00	0.00 (+0.00)	
<input type="checkbox"/> 2	** Lunch Break **		0:30		
<input type="checkbox"/> 3	Exmouth WA 6707, Australia	3:09pm (+7:39)	0:00	781.58 (+781.58)	

FIGURE 46 CORAL COAST ROUTE – DAY 2

Travel time for returning from Exmouth to Perth city by car is thirteen hours, as it is a distance of 1250 km. (Google Maps) and it is not recommended to complete the entire journey overnight due to travel fatigue. It is strongly recommended to allow a third day on the itinerary for returning to Perth by car. (See next figure)

Summary					
Route #1					
Route #1: 3 addresses, duration 13:20, distance 1249.34 km					
<input type="checkbox"/> No.	Address	Time	Srv.	Distance	Size
<input type="checkbox"/> 1	Exmouth WA 6707, Australia	7:00am (+0:00)	0:00	0.00 (+0.00)	
<input type="checkbox"/> 2	** Lunch Break **		0:30		
<input type="checkbox"/> 3	Perth WA, Australia	8:20pm (+12:50)	0:00	1249.34 (+1249.34)	

FIGURE 47 CORAL COAST ROUTE - DAY 3

### 7.3.GOLDEN OUTBACK ROUTE

**Note 1:** The system doesn't recognize the Esperance destination as a particular input for routing as it is a region and not an specific location (in some cases it just target the center of the are but not this time). Therefore, the system is using Pink Lake, which is also located in Esperance to generate the route

**Note 2:** The Esperance area mentioned in the Golden outback's top attractions groups different tourist destinations in the area. Then, Esperance and Esperance area should be considered as one and be represented as mentioned in Note 1 by Pink Lake.

**Note 3:** Based on Note 2, the scenario will only consider four locations and will allow the system to simulate the way back to Perth directly.

Figure 48 bellow indicates that Esperance and Esperance Region tourist destinations (Represented by the Pink Lake), should have restaurants which provide lunch and accommodation services due to the "Lunch Break" time.

All Routes						
Route #1						
Route #2						
Route #1: 4 addresses, duration 8:12, distance 719.33 km						
<input type="checkbox"/>	No.	Address	Time	Srv.	Distance	Size
<input type="checkbox"/>	1	Perth WA, Australia	7:00am (+0:00)	0:00	0.00 (+0.00)	
<input type="checkbox"/>	2	Kulin WA 6365, Australia	10:09am (+3:09)	0:00	277.43 (+277.43)	
	3	** Lunch Break **		0:30		
<input type="checkbox"/>	4	Pink Lake, WA 6450, Australia	3:12pm (+4:33)	0:00	719.33 (+441.90)	

**FIGURE 48 GOLD OUTBACK ROUTE - DAY 1**

Similarly, Leinster and Kalgoorlie should have restaurants that provide lunch for the visitors in their second day. Additionally, accommodation facilities should be prioritized in Leinster.

All Routes: <span style="background-color: #e0e0ff;">Route #1</span> <span style="background-color: #e0ffe0;">Route #2</span>					
Route #2: 5 addresses, duration 19:00, distance 1732.06 km					
No.	Address	Time	Srv.	Distance	Size
1	Pink Lake, WA 6450, Australia	7:00am (+0:00)	0:00	0.00 (+0.00)	
2	Kalgoorlie - Boulder WA, Australia	11:11am (+4:11)	0:00	396.60 (+396.60)	
3	** Lunch Break **		0:30		
4	Lalster WA 6437, Australia	3:35pm (+3:54)	0:00	767.86 (+371.26)	
5	Perth WA, Australia	2:00am (+10:25) Day+1	0:00	1732.06 (+964.18)	

FIGURE 49 GOLD OUTBACK ROUTE -DAY 2

#### 7.4. SOUTHWEST ROUTE

As locations are part of a direct way to Pemberton (See Figure 50), some settings have been adjusted for this route.



FIGURE 50 LOCATION OF SOUTHWEST TOURIST DESTINATIONS

Then, in order to provide the visitor flexibility in each day's hours, the value of Hours per Day has been modified from 12 to 4.

FIGURE 51 SPECIAL CONDITIONS FOR THE SOUTHWEST ROUTE

From Figure 52, it can be induced that if the route ends in Margaret River, there should be suitable accommodation and food. Also, as Busselton and Bunbury are intermediate stops, it may be good to provide food for the visitors who don't want to wait until lunch.

All Routes						
Route #1						
Route #2						
Route #1: 4 addresses, duration 3:13, distance 275.47 km						
<input type="checkbox"/>	No.	Address	Time	Srv.	Distance	Size
<input type="checkbox"/>	1	Perth WA, Australia	7:00am (+0.00)	0.00	0.00 (+0.00)	
<input type="checkbox"/>	2	Bunbury WA, Australia	8:56am (+1:56)	0.00	174.09 (+174.09)	
<input type="checkbox"/>	3	Busselton WA 8280, Australia	9:35am (+0:39)	0.00	226.34 (+52.25)	
<input type="checkbox"/>	4	Margaret River WA 8285, Australia	10:13am (+0:38)	0.00	275.47 (+49.13)	

FIGURE 52 SOUTHWEST ROUTE – DAY 1

The Figure 53 points out again the importance of Margaret River as the center of this route. Route 2 starts here the next day and requires food and accommodation. It also shows that Pemberton will be a possible destination to visit before returning to Perth and therefore, it may be a good idea to consider a restaurant in Pemberton as well.

All Routes				
Route #1				
Route #2				
Route #2: 3 addresses, duration 5:18, distance 458.45 km				
<input type="checkbox"/> No.	Address	Time	Srv.	Distance Size
<input type="checkbox"/> 1	Margaret River WA 6285, Australia	7:00am (+0:00)	0:00	0.00 (+0.00)
<input type="checkbox"/> 2	Pemberton WA 6260, Australia	8:38am (+1:38)	0:00	135.20 (+135.20)
<input type="checkbox"/> 3	Perth WA, Australia	12:18pm (+3:40)	0:00	458.45 (+323.25)

FIGURE 53 SOUTHWEST ROUTE - DAY 2

**7.5.NORTHWEST ROUTE**

As in this category, there is only one tourist destination, it is recommended that tourists stay for at least one night in the appeal due to the long distance traveled in order to reach there.

Note 1: The tourist destination is considerably far from Perth City. Therefore, the parameters were adjusted as presented in the next figure (Notice that 0 represent no restriction of time).

**MULTI ROUTING**

Number of Routes: 2 Routes

Max Route Duration: 0 H 0 min (0 - no limit)

Max Stops per Route: 0

Allow Deviation: Without Deviation

Max Vehicle Size: 9

---

**EXTENDED TRIPS (OVERNIGHT)**

Hours per Day (overnight stay): 0

FIGURE 54 ADJUSTMENTS FOR NORTHWEST ROUTE



**FIGURE 55 LOCATION OF NORTHWEST ROUTE**

Figure 55 illustrates how far are these tourist destinations, it is therefore suggested that air mode transportation maybe more suitable for tourists that cannot stay for longer periods of time. Additionally, all services should be provided in this location as it is too far from other places (More than one day driving).

### **7.6.PERTH CITY ROUTE**

From Table 33, it can be seen that the top tourist destinations have a considerable number of nights in average (More than two nights). This indicates that the tourists who tour Perth are able to stay for extended periods before moving to another destination in the same region.

<b>Tourist destination</b>	<b>Average number of nights</b>
Victoria Park - Lathlain - Burswood	39.5
Nedlands - Dalkeith - Crawley	14.2

Bentley - Wilson - St James	13.1
South Lake - Cockburn Central	9.5
Perth City	8
Subiaco - Shenton Park	7.8
Mandurah	4
Fremantle	3.4
East Victoria Park - Carlisle	3.3
Yanchep	1.7

TABLE 26 AVERAGE OF NIGHTS SPENT IN EACH TOURIST DESTINATION

Figure 57 shows that tourist destinations in Perth area are close to one another which require in some cases less than 10 minutes' drive to be reached. Thus, the route presented for the Perth area can be easily modified depending on the tourist individual preferences.

No.	Address	Time	Srv.	Distance	Size
1	Nedlands WA 8009, Australia	7:00am (+0:00)	0:00	0.00 (+0.00)	
2	Subiaco WA 8008, Australia	7:09am (+0:09)	0:00	5.58 (+5.58)	
3	Perth WA, Australia	7:19am (+0:10)	0:00	8.29 (+3.73)	
4	Victoria Park WA 6100, Australia	7:33am (+0:14)	0:00	14.78 (+5.49)	
5	Bentley WA 6102, Australia	7:41am (+0:08)	0:00	19.46 (+4.68)	
6	South Lake WA 6154, Australia	8:01am (+0:20)	0:00	37.16 (+17.70)	

FIGURE 56 PROPOSED ROUTE FOR PERTH CITY

### 7.7. Supply Chain Integration: Web-based integrator.

One of the main findings from this study is the massive use of internet by tourists as a destination research tool while they are still in China, especially in light of the fact that they do not use websites commonly used in Australia such as Google., Facebook and Youtube. Therefore, tourism partners should present an integrated (regional and metropolitan) web/application that allow Chinese tourist to engage easily with WA tourist destinations.

One example of a local initiative to promote tourism in WA is "[www.waholidayguide.com.au](http://www.waholidayguide.com.au)". (WA Holiday Guide Ltd Pty 2017). This website should be advertised in Mandarin and engage with major websites such as Weibo and Renren to



facilitate the integration of tours, car rental and accommodation. It also allows visitors to book the aforementioned services.



FIGURE 57 WA HOLIDAY GUIDE WEBSITE

From the initial homepage of the website [www.waholidayguide.com](http://www.waholidayguide.com), it can be seen that some [tourism websites](#) are already including supply chain integrative strategies as described in 3.4. As seen in Figure 58, waholidayguide.com integrates accommodation providers, car rental companies, tour operators, attractions and advertisers (general).



FIGURE 58 SUPPLY CHAIN INTEGRATION THROUGH WEBSITES





FIGURE 59 SUPPLY CHAIN INTEGRATION: CAR RENTAL COMPANIES



FIGURE 60 SUPPLY CHAIN INTEGRATION: DISCOUNTS STRATEGY IN ACCOMMODATION

Hence, supply chain integration is possible for the WA tourism industry as it is already being developed. But perhaps it can be improved for the use of Chinese tourists. (Example: A Chinese version for the site).

### 7.8.Demand management: Current accommodation vs demanded services

Based on information from the visitor centers of each region, the study highlights locations where the requirements of WA Chinese holiday tourists can be satisfied with the current regional infrastructure:

Accommodation demand vs Current services		
#	Location for sleep	Visitor Centre Information
1	Northampton/Exmouth	<ul style="list-style-type: none"> <li>• <i>Northampton doesn't possess hotels (3, 4 or 5 stars) and apparently, the current infrastructure does not provide "fancy" accommodation (Northampton Motor Hotel and Miner's Arms Hotel) (Northampton 2017).</i></li> <li>• Exmouth provides resorts with views. Chinese holiday tourists should be satisfied (Exmouth visitor centre 2017)</li> </ul>
2	Broome	<ul style="list-style-type: none"> <li>• This location provides luxury resorts (Broome visitor centre 2017).</li> </ul>
3	Margaret River	<ul style="list-style-type: none"> <li>• This location provides a variety of hotels as well as luxury accommodation (Margaret River visitor centre 2017).</li> </ul>
4	Leinster/Kalgoorlie	<ul style="list-style-type: none"> <li>• <i>Leinster only provides caravan park and lodge (Leinster community resource centre 2017).</i></li> <li>• Kalgoorlie provides all type of accommodation including hotels and resorts (Kalgoorlie visitor centre 2017)</li> </ul>
5	Perth Suburbs	<ul style="list-style-type: none"> <li>• All Perth city and surround areas' hotels and resorts apply.</li> </ul>

TABLE 27 CURRENT BUSINESS GAPS

Thus, the Northampton and Leinster regions may require investments in hotels (accommodation).

## CHAPTER 8 – RESEARCH FINDINGS

*The present section will present tables with the findings obtained from the IVS database analysis and routing. The findings related to supply chain integration and demand will be presented in paragraphs at the end.*

### 8.1.ROUTING FACTORS FRAMEWORK: WA Chinese holiday tourists

The next table summarizes the routing factors analyzed in the study:

Routing factors to consider when designing routes/itineraries for Chinese holiday tourists in WA		
#	Factor	Conclusion
1	Budget	Chinese holiday tourists spend around 434 AUD per night or 4124 AUD in 9.1 days
2	Age	77% of tourists come from the range between 20 to 40 years, but more than 30% had between 25 to 29 years when interviewed.  This result differs from the TRA's "Marketing Matters: China" 2013 publication which states an Australia's Chinese visitors largest age is between 45 to 59 years.
3	Australian arrival city	79% arrive directly to Perth 17% only stay in Perth 21.29% that arrive Australia through Perth remain in Perth Almost 50% have 1,3 or 4 stops in Australia
4	Length of Stay	The study found that WA's Chinese holiday tourists stay in the state an average of 22.18 nights.  The mentioned average represents a 47% of the total nights spent in Australia reported by TRA's "Marketing Matters: China" 2013 report.
5	Use of group tour	90% of the tourists doesn't hire an agency before arriving Australia (excluding surveys where visitors were not asked about

		this)
<b>6</b>	Use of internet	90% researched about the Australian tourist destinations before arriving Australia 87% of tourists that only came to Perth searched about Australian tourist destinations before arriving Australia.  Therefore, it is crucial to advertise WA’s tourist destinations in the Chinese social media as well as the Chinese websites.
<b>7</b>	Period of arrival	Most of the tourists arrive in the March quarter (January, February, March)
<b>8</b>	Method of transportation	The transportation methods most used to move within stops are car rental and hiring private car For long distances 6% uses aircraft
<b>9</b>	Accommodation	24% prefer hotel (bellow 4 stars) and 14% prefer 4 or 5 stars 22% prefer friends or relatives property Only 12% use backpackers
<b>10</b>	Tourist destinations popularity	43.22% of the total visits are in Perth city The second one is Fremantle with 5.5%
<b>11</b>	Nights used	43% of total nights are used in Perth city The second one is Victoria park with 5.58%
<b>12</b>	Routes Categories	WA is a huge are and required to divide the tourist destinations by geographical region: Perth city, northwest, southwest, coral coast and golden outback. (Adaption for Chinese holiday tourists, see results in point 7.2.2.)

**TABLE 28 ROUTING FACTORS TO CONSIDER WHEN DESIGNING ROUTES FOR CHINESE HOLIDAY TOURISTS IN WA**

These factors identification made possible the routes prototype analysis.

## **8.2.FINDINGS FROM THE ROUTES**

### **8.2.1. Supply chain integration though Chinese applications**

During the stage of literature review,

Routes prototypes results		
#	Route	Findings
1	Coral Coast	<ul style="list-style-type: none"> <li>• Three days and two nights are required at least for this route (Including some hours for enjoying tourist destinations)</li> <li>• Recommended stops are located in Northampton and Exmouth. According to 7.1. These tourists like hotels and fancy hotels (4 or 5 stars). Therefore, these locations may require this type of infrastructure.</li> <li>• It is also important to add that these tourists like high quality food (See 3.3.4.). Therefore, it is highly recommendable to have restaurants in Northampton and Exmouth.</li> <li>• Morawa and Geraldton appeared to be potential points for having lunch. Then, high quality restaurants should be considered here.</li> <li>• Tourists would require buying food in Northampton as they will have to drive around 7 hrs to reach Exmouth.</li> <li>• Time from Exmouth to Perth needs around 12 hrs. Different stops must be considered for resting and eating through the previously mentioned stops.</li> </ul>

TABLE 29 CORAL COAST ROUTE FINDINGS

Routes prototypes results		
#	Route	Findings
2	Golden Outback	<ul style="list-style-type: none"> <li>• Three days and two nights are required at least for this route (Including some hours for enjoying tourist destinations)</li> <li>• One night at Esperance and one at Leinster/Kalgoorlie are recommended. Then, these locations should have the hotels required for these tourists.</li> </ul>

- Kalgoorlie should have restaurants with excellent quality.
- Kulin is a potential stop where facilities such as toilets should be available to the public.
- The way back requires around 10 hours travel time. It is recommended to start this part of the journey on a new day at 7 am. It will require acquisition of food and supplements at Esperance.

**TABLE 30 GOLDEN OUTBACK ROUTE FINDINGS**

Routes prototypes results		
#	Route	Findings
3	Southwest	<ul style="list-style-type: none"> <li>• It is recommended to do this trip in 2 days. Nevertheless, as all the tourist destinations are part of a route, it is possible to do it in 1 day.</li> <li>• The routes indicate that it is highly likely that tourists would spend one night at Margaret River. This tourist destination is well known for its food, but perhaps it is necessary to assess its accommodation capabilities.</li> <li>• Pemberton has been identified as one region at the end of the route, and perhaps some tourists would like to eat there. Nevertheless, as it is relatively near of Margaret River, it doesn't require expensive accommodation facilities.</li> <li>• The way back requires around 3.4 hours; it is highly necessary to recommend the tourists to rest in some of the stops on the way.</li> </ul>

**TABLE 31 SOUTHWEST ROUTE FINDINGS**

Routes prototypes results		
#	Route	Findings

4	Northwest	<ul style="list-style-type: none"> <li>• The study suggests that only one tourist destination has been found to be of interest to Chinese holiday tourists: Broome.</li> <li>• Broome is 2,350km from Perth City and perhaps requires a flight to reach there.</li> <li>• This tourist destination would need to have all services required: Hotels, high quality restaurants, interesting points around, etc.</li> <li>• The way back would also require the use of aircraft.</li> </ul>
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**TABLE 32 NORTHWEST ROUTE FINDINGS**

Routes prototypes results		
#	Route	Findings
5	Perth City	<ul style="list-style-type: none"> <li>• All the tourist destinations are relatively close to each other. One day can use to pass through all of them. However, each tourist destination may demand more or less time depending on the tourists.</li> <li>• Tourists use all types of accommodation around Perth in the suburbs near Murdoch, Bentley, Victoria Park, etc.</li> <li>• As most of the tourists stay around Perth city, it is important to promote the tourist destinations in this area.</li> <li>• As tourist also review the tourist destinations before coming to Australia, it is important to promote WA tourist destinations in the Chinese social media which are completely separate from the Western social media (Facebook, Youtube, Google, Twitter, etc.). It is well known that in China, people cannot access the mentioned Western social media.</li> </ul>

**TABLE 33 PERTH CITY ROUTE FINDINGS**

### **8.3. SUPPLY CHAIN APPLICATIONS' FINDINGS**

### **8.3.1. Suppliers integration**

As discussed in Section 3.4, technology provides a substantial support for supply chain integration. This support has been illustrated through some cases in 3.4, but Chapter 8 suggested/indicated that this can be applied to WA using accommodation and car rental bookings (including discount integrative strategies), tours, advertisement, etc. However, it is also apparent that more efforts should be applied to these types of web-based integrators such as online food catalogues and bookings or Chinese websites versions. As seen in s 8.1., websites such as waholidayguide.com integrate many tourism services but it is not targeting Chinese holiday visitors and Chinese social media.

### **8.3.2. Demand management**

Section 8.2 contrasted the results from the routes (Chapter 7) based on the particular Chinese holiday tourist analysis (Chapter 5) and the current related literature (Chapter 3) with the available services/infrastructure information provided by the respective visitor centers. Then, it is suggested that places such as Leinster and Northampton may require more investment in hotels or resorts (Section 8.2).



## CHAPTER 9 CONCLUSIONS, LIMITATIONS, AREAS OF FUTURE STUDY AND SUGGESTIONS

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*This final section will summary what has been done in the study, answer the research questions and contrasting the findings with the current state of art pointing out the study's contribution.*

*In the next point, the study will point out the limitations that arose due to the nature of the data, the software used and length of this study.*

*Finally, this chapter will indicate which are the detected areas of future study which require attention and some suggestions while looking into them.*

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### 9.1. CONCLUSION

Through some analysis of the IVS database of Chinese holiday visitors, the study found who they are, how they prepared for the trip, what accommodation and transportation they use, where they go most, and where they spend the majority of their time in WA (Chapter 5). Based on this information, a routing system was selected (Chapter 6) and used to generate some routes for main tourist destinations within regional and metropolitan areas (Chapter 7).

Regarding the routing factors to consider for WA's Chinese holiday visitors, the study found that some of these factors are: Interest in the shortest route, best time, lunch time, travel mode, route duration, number of traveling hours per day, etc. (Chapter 6)

The study found areas that require specific levels of services (Chapter 7). For example, Chinese holiday tourists prefer to stay in 4 or 5 star hotels or at least hotels 3 or less stars rather than caravans or hostels, but that remote locations such as Northampton may not be able to respond this demand.

Chapter 8 summarises the findings with quantitative information that describes the routing framework as well as the logistic results from the prototypes generation (Chapter 7). In this chapter, the study also contrasted its findings with past TRA reports. Also, this thesis found that WA's tourism industry is distant from the eastern states' tourism cluster and that there is a lack of specific research about WA's Chinese holiday tourists (Chapter 3).

Although the limitations described in Chapter 8, the study provided some information about these visitors, their behavior in WA and what could be possibly be improved to increase their satisfaction. Nevertheless, the aim of boosting WA's tourism industry requires research in many trends such as Chinese social media, real estate analysis and tourism partners' integration.

## **9.2. LIMITATIONS**

There are three main limitations for the present study which are expected to be surpassed in future studies:

### **9.1.1.NATURE OF DATA**

The main source of data used for the "Routing factors framework" is the IVS database. Nevertheless, the information described there about the tourist destinations is limited to the area (suburbs) where the locations are.

For example: It mentions Stopover: Fremantle. But it does not mention if the tourists visited Fremantle Prison, Fremantle Market or Fremantle's beaches.

Nevertheless, it was possible to generate the routes because the attractions are close but the results can be more precise if the IVS has information about the attractions.

### **9.1.2. MYROUTEONLINE.COM**

This study analyzed some free routing software and selected Myrouteonline.com to generate routes prototypes. Through the study, it has been mentioned that the software has an enormous potential but the free version only allows the use of 6 locations for routing. Therefore, it is suggested that a future study should acquire the licenses required and generate routes for all the tourist destinations it desires.

### **9.1.3. DURATION OF RESEARCH PERIOD**

This study was performed during the researcher's last semester. As part of the curriculum, the researcher is required to do research in less than four months which is a limited time to expand the scope of this study. However, this period was enough to achieve the intended objectives in Chapter 1 and provide recommendations for future studies.

### **9.1.4. ACCOMODATION**

Through the study, it was found that some places in the most popular routes in WA may require improvements in accommodation quality due to the requirements of the Chinese holiday visitors. However, this topic was not the center of the dissertation and was only discussed after some findings suggested its improvement opportunities.

### **9.3.LIMITATIONS AND AREAS OF FUTURE RESEARCH**

#### **9.3.1.AREA OF STUDY: INTERNATIONAL VISITORS' SUVEYS**

It is understandable that this survey is not retrieved for the specific purposes of this study, but in order to provide more accurate information, it should consider the information about specific attractions and not be limited to areas (suburbs),

**Suggestion:** IVS should include in their surveys more information about the specific attractions visited by the tourists. Important places such as Perth City and Fremantle have many attractions and due to the lack of specific information, it is impossible to generate routes based on attractions.

#### **9.3.2.AREA OF STUDY: CHINESE SOCIAL MEDIA**

The framework pointed out two crucial results: Chinese holiday in WA tourists are independent travelers (don't acquire group packages before reaching Australia) and more than 80% of them search about WA tourism websites including social media sites before arriving Australia.

Therefore, all knowledge they acquire about WA relies in the Chinese internet social media websites.

**Suggestion:** Studies focused in promoting WA tourist destinations in the Chinese social media should be a priority.

#### **9.3.3.AREA OF STUDY: ACCOMMODATION AND REAL ESTATE**

Findings indicate (Duration of stopovers, type of accommodation preferred and literature review) indicate that Chinese holiday tourists may be inclined to acquire properties or use properties already acquired by friends or family.

Renting apartments was also found to be among preferred options which.

Also, through the routing analysis it was found detected that these tourists may require accommodation in regional areas depending on their trip.

Based on the results of routing and data analysis, it was suggested that local accommodation business should have in mind that these tourists may prefer hotels or luxury hotels rather than campsites, backpack accommodation or hostels. (See Chapter 3).

**Suggestion:** Real estate research for this specific market should be performed to have a better understanding of the WA Chinese tourist in relation to their accommodation needs.

#### **9.3.4.AREA OF STUDY: FOOD SERVICES**

The framework also described that WA Chinese tourists prefer high quality food.

In addition, routing analysis explained that regional routes are long and would probably require food services. Different stops were suggested which require future analysis to determine their business effectiveness.

**Suggestion:** There may be a shortage of offer in terms of restaurants in the Coral Coast and Esperance.

#### **9.3.5.AREA OF STUDY: TRANSPORTATION**

Private vehicles have been identified as the most popular means of transportation by the Chinese holiday tourists. Nevertheless, through the routing and supply chain analysis processes, it was found that some popular tourist destinations area far from Perth City area and may require new transportation options. These new options should reduce the transportation time at a reasonable cost.

**Suggestion:** New regional transportation options should be analysed for tourists that want to reach remote regional tourist destinations in a faster and reasonably economic way

## APPENDIX 1 PROBLEM RESEARCH

### a) Chinese tourists in Australia

Curtin University Library (Only academic journals and thesis)			
Date of query	Keywords	Name of the top 5 articles found (sorted by relevance)	Conclusion
4/15/2017	<b>Chinese tourists in Australia</b>	Anticipating Chinese tourist's arrivals in Australia: A time series analysis	Deep research topics. A lot of information available.
4/15/2017		How "Face" Matters: Chinese Corporate Tourists in Australia	
4/15/2017		Structural Relationships among Destination Preference, Satisfaction and Loyalty in Chinese Tourists to Australia	
4/15/2017		Tourist Shoppers' Evaluation of Retail Service: A Study of Cross-Border versus International Out shoppers	
4/15/2017		Chinese recreational vehicle users in Australia: An ethnographic study of tourist motivation	
Google Scholar (Only academic journals and thesis)			
Date of query	Keywords	Name of the top 5 articles found (sorted by relevance)	Conclusion
4/15/2017	<b>Chinese tourists in Australia</b>	Clustering of Chinese tourists to Singapore: An analysis of their motivations, values, and satisfaction	Deep research topics. A lot of information available.
4/15/2017		Tourism development of Australia as a sustained preferred destination for Chinese tourists	
4/15/2017		Food preferences of Chinese tourists	
4/15/2017		Structural relationships among destination preference, satisfaction, and loyalty in Chinese tourists to Australia	
4/15/2017		Tourism marketing opportunities for Australia	

in China

TABLE 34 CURTIN LIBRARY/GOOGLE SCHOLAR STATE OF ART REVIEW: CHINESE TOURISTS IN AUSTRALIA

b) Chinese tourists in WA: Curtin library

Curtin University Library (Only academic journals and thesis)			
Date of query	Keywords	Name of the top 5 articles found (sorted by relevance)	Conclusion
4/20/2017	<b>WA Chinese tourists</b>	Chinese Vice-Premier Wu Yi discusses tourism with visiting Japanese minister	No results. When using term WA, the searcher takes other topics and misunderstand term WA
4/20/2017		China's Wu Yi addresses Asian tourism ministers meeting in Beijing,	
4/20/2017		Chinese Vice-PM Wu Yi stresses tourism in economic development	
4/20/2017		The politics of everyday ethnicity in China	
4/20/2017		Water development and water planning in the Southwestern United States: HUMLUM, J. (1969)	
4/20/2017		<b>Perth Chinese tourists</b>	
4/20/2017	2004 getaways and day trips		
4/20/2017	2004: the year that was		
4/20/2017	2005 getaways and day trips		
4/20/2017	2008 Hot Tables		
4/20/2017	<b>Perth China Tourism</b>		10th European Workshop on Astrobiology (Russia, Push chino, September 6–8, 2010)
4/20/2017		2004 getaways and day trips	
4/20/2017		2005 getaways and day trips	
4/20/2017		2007 Coldwell Banker(R) Home Price Comparison Index Reveals that over \$2 Million Separates Beverly Hills from Charlottetown	

4/20/2017		2008 Directory of SUMMER STUDY ABROAD PROGRAMS	
4/20/2017	<b>Tourism</b>	2004 getaways and day trips	No results. None
4/20/2017	<b>Perth-Asia</b>	2005 getaways and day trips	of the
4/20/2017		3G's for Modern Ecotourism	publications has
4/20/2017		3rd International Conference on Thai Studies	relation with the
4/20/2017		5th Congress of the European Federation for Primatology. Antwerp, Belgium, September 10-13, 2013	objective.

TABLE 35 CURTIN LIBRARY STATE OF ART REVIEW: CHINESE TOURISTS IN WA

c) Chinese tourists in WA: Google Scholar

Google Scholar (Only academic journals and thesis)			
Date of query	Keywords	Name of the top 5 articles found (sorted by relevance)	Conclusion
4/20/2017	<b>WA</b>	Shopping behavior of Chinese tourists visiting the United States: Letting the shoppers do the talking	No results. Even if we find
4/20/2017	<b>Chinese tourists</b>	Risks perceived by Mainland Chinese tourists towards Southeast Asia destinations: A fuzzy logic model	interesting results, these are not focused
4/20/2017		Chinese Move to Eclipse US Appeal in South Asia	directly to WA or Perth.
4/20/2017		Chinese travelers to the United States: a comparison of business travel and visiting friends and relatives	Nevertheless, they are relevant for
4/20/2017		Segmenting Chinese outbound tourists by perceived constraints	discussion.
4/20/2017	<b>Perth Chinese tourists</b>	A cultural framing of nature: Chinese tourists' motivations for, expectations of, and satisfaction with, their New Zealand tourist experience.	No results. Even if we find interesting
4/20/2017		Destination image building & its influence on target preference & loyalty of Chinese tourists to	results, these are not focused

		Australia	directly to WA
4/20/2017		The role of destination image in tourism: A review and discussion	or Perth.
4/20/2017		Practical environmental interpretation at Chinese natural tourist destinations: The need for an aesthetic approach	Nevertheless, they are relevant for discussion.
4/20/2017		Chinese recreational vehicle users in Australia: An ethnographic study of tourist motivation	
4/20/2017	<b>Perth</b>	Tourism governance and sustainable national development in China: A macro-level synthesis	No results.
4/20/2017	<b>China</b>	The role of destination image in tourism: A review and discussion	None of the publications has relation
4/20/2017	<b>Tourism</b>	Development, distribution, and evaluation of online tourism services in China	with the objective.
4/20/2017		2Tourism and hotel development in China: From political to economic success	
4/20/2017		Consolidation in a wildlife tourism industry: the changing impact of whale shark tourist expenditure in the Ningaloo Coast region	
4/20/2017	<b>WA</b>	Tourism development and cultural policies in China	No results.
4/20/2017	<b>China</b>	Tourism as a factor of long-run economic growth: An empirical analysis for Chile	None of the publications has relation
4/20/2017	<b>tourism</b>	Tourism's impact on long-run Mexican economic growth	with the objective.
4/20/2017		The cultural space of modernity: ethnic tourism and place identity in China	
4/20/2017		Developing ethnic tourism in Yunnan, China: Shilin Sani	

TABLE 36 GOOGLE SCHOLAR STATE OF ART REVIEW: CHINESE TOURISTS IN WA



## APPENDIX 2 DATABASE REPORTS

Number of nights	Count of ID
<b>Perth</b>	<b>100.00%</b>
<b>1</b>	<b>100.00%</b>
<b>1</b>	1.16%
<b>2</b>	4.65%
<b>3</b>	3.49%
<b>4</b>	5.81%
<b>5</b>	6.98%
<b>6</b>	3.49%
<b>7</b>	12.79%
<b>8</b>	12.79%
<b>9</b>	6.98%
<b>10</b>	10.47%
<b>11</b>	2.33%
<b>14</b>	1.16%
<b>15</b>	2.33%
<b>17</b>	2.33%
<b>18</b>	1.16%
<b>19</b>	1.16%
<b>20</b>	2.33%
<b>21</b>	1.16%
<b>23</b>	1.16%
<b>28</b>	1.16%
<b>30</b>	1.16%
<b>31</b>	1.16%
<b>35</b>	1.16%
<b>51</b>	1.16%
<b>53</b>	1.16%
<b>72</b>	1.16%
<b>74</b>	1.16%

<b>76</b>	1.16%
<b>80</b>	1.16%
<b>90</b>	1.16%
<b>97</b>	1.16%
<b>100</b>	1.16%
<b>210</b>	1.16%
<b>Grand Total</b>	<b>100.00%</b>

TABLE 37 ARRIVED PERTH CHINESE HOLIDAY TOURISTS' LENGTH IN AUSTRALIA

Stopover distribution	Proportion
Perth City	40.35%
Fremantle	5.94%
Margaret River	4.70%
Exmouth	3.96%
Albany	3.47%
Bentley - Wilson - St James	2.72%
Northampton - Mullewa - Greenough	2.48%
Gingin - Dandaragan	2.23%
Geraldton	1.73%
Subiaco - Shenton Park	1.49%
Mandurah	1.49%
South Perth - Kensington	1.49%
Nedlands - Dalkeith - Crawley	1.24%
Busselton	1.24%
Pemberton	0.99%
Broome	0.99%
Applecross - Ardross	0.99%
East Victoria Park - Carlisle	0.74%
Hamilton Hill	0.74%
Cannington - Queens Park	0.74%
Bunbury	0.74%
Victoria Park - Lathlain - Burswood	0.74%
Morley	0.74%
Leeming	0.74%
Esperance	0.74%
Malaga	0.74%
Yanchep	0.74%
Wanneroo	0.50%
South Lake - Cockburn Central	0.50%
Kalgoorlie	0.50%
Como	0.50%

Belmont - Ascot - Redcliffe	0.50%
Morawa	0.50%
Bayswater - Embleton - Bedford	0.50%
Dianella	0.50%
Scarborough	0.50%
Ballajura	0.50%
Kulin	0.50%
North Perth	0.50%
Armadale - Wungong - Brookdale	0.50%
Wembley - West Leederville - Glendalough	0.50%
Fremantle - South	0.50%
Padbury	0.50%
Yokine - Coolbinia - Menora	0.50%
Rockingham	0.25%
Canning Vale - West	0.25%
Esperance Region	0.25%
Maylands	0.25%
Perth Airport	0.25%
Melville	0.25%
Kewdale Commercial	0.25%
Carnarvon	0.25%
Leinster - Leonora	0.25%
Carramar	0.25%
Australia's North West Region nfd	0.25%
Mount Hawthorn - Leederville	0.25%
Beckenham - Kenwick - Langford	0.25%
Murdoch - Kardinya	0.25%
Karratha	0.25%
Greenwood - Warwick	0.25%
Beechboro	0.25%
Bibra Industrial	0.25%
Thornlie	0.25%
Hillarys	0.25%
Augusta	0.25%
Cottesloe	0.25%
Willagee	0.25%
Parkwood - Ferndale - Lynwood	0.25%
Booragoon	0.25%
Iluka - Burns Beach	0.25%
Irwin	0.25%
Grand Total	100.00%

TABLE 1838 WA CHINESE TOURISTS FREQUENT STOPS

City of Arrival	Sum of Stopover number of nights
Perth City	43.49%
Victoria Park - Lathlain - Burswood	5.58%
Cannington - Queens Park	5.18%
Hamilton Hill	3.76%
Bentley - Wilson - St James	3.17%
Murdoch - Kardinya	2.30%
Applecross - Ardross	2.04%
Leeming	1.99%
Fremantle	1.94%
Greenwood - Warwick	1.80%
Morley	1.73%
Melville	1.70%
Nedlands - Dalkeith - Crawley	1.68%
Albany	1.66%
Malaga	1.42%
Margaret River	1.40%
South Perth - Kensington	1.28%
Exmouth	1.21%
Subiaco - Shenton Park	1.11%
Mandurah	1.09%
Canning Vale - West	1.06%
Broome	1.04%
Dianella	1.02%
South Lake - Cockburn Central	0.90%
Como	0.88%
Northampton - Mullewa - Greenough	0.62%
Thornlie	0.54%
Bayswater - Embleton - Bedford	0.52%
Padbury	0.47%
Busselton	0.45%
Beechboro	0.40%
Cottesloe	0.35%
North Perth	0.31%
Wembley - West Leederville - Glendalough	0.31%
Yokine - Coolbinia - Menora	0.28%
Hillarys	0.28%
Wanneroo	0.28%
Scarborough	0.28%
Gingin - Dandaragan	0.28%
Kalgoorlie	0.24%
East Victoria Park - Carlisle	0.24%
Maylands	0.24%

Carramar	0.24%
Booragoon	0.24%
Bunbury	0.21%
Fremantle - South	0.21%
Willagee	0.21%
Geraldton	0.19%
Kewdale Commercial	0.19%
Armadale - Wungong - Brookdale	0.19%
Bibra Industrial	0.17%
Beckenham - Kenwick - Langford	0.14%
Esperance	0.14%
Bassendean - Eden Hill - Ashfield	0.14%
Parkwood - Ferndale - Lynwood	0.12%
Yanchep	0.12%
Perth Airport	0.09%
Chittering	0.09%
Pemberton	0.09%
Iluka - Burns Beach	0.07%
Kulin	0.07%
Morawa	0.07%
Belmont - Ascot - Redcliffe	0.05%
Ballajura	0.05%
Ashburton (WA)	0.05%
Esperance Region	0.05%
Stirling Range National Park	0.02%
Safety Bay - Shoalwater	0.02%
Kununurra	0.02%
Australia's North West Region nfd	0.02%
Augusta	0.02%
Mount Hawthorn - Leederville	0.02%
Carnarvon	0.02%
Port Hedland	0.02%
Karratha	0.02%
Rockingham	0.02%
Leinster - Leonora	0.02%
Irwin	0.02%
Grand Total	<b>100.00%</b>

Table 399 Stopovers with the largest number of nights

### APPENDIX 3: SOFTWARE SELECTION

#	Routing Factor	Myrouteonline	Speedroute	MapQuest	WA Chinese Holiday visitors framework	Comments
1	Geographical locations	X	X	X	Y	Chinese tourists are interested in World class locations see point 3.1
2	Location's visit duration	X	X		Y	The length of stay can vary from 4 to 10 in average. Then, Chinese tourists that have around four days need to plan the time required for each location see point 5.5
3	Interest in best time	X	X		Y	The length of stay can vary from 4 to 10 in average. Then, Chinese tourists that have around four days need to plan the time required for each location see point 5.5
4	Interest in considering time for lunch	X			Y	Chinese tourists are interested in high quality food and therefore, in having a pleasant time of lunch. See point 3.3.4
5	Interest in travel mode	X			Y	Chinese tourist prefers to use private transportation and driving. See point 5.9
6	Interest in maximum number of routes	X			Y	Most of these tourists stay in WA for seven days and want to see as much as possible. See 5.5.
7	Interest in maximum route duration	X			Y	As Chinese tourists prefer to drive (See 5.9.), it is important to consider the duration of the route, and the time they will spend driving.
8	Interest in maximum stop duration	X			Y	Chinese tourists have limited time for trips and seeing the tourist destination See 5.5. Therefore it is essential to consider the time spent traveling as well as the time used in experiencing each tourist destination.
9	Interest in maximum number of stops per route	X			Y	Chinese tourists probably will drive themselves (5.9) and want to enjoy the tourist destinations (3.3.7). Then, a limited amount of hours traveling and stops can be realized.
10	Interest in number of travel	X			Y	Due to fatigue, tourists cannot drive all 24 hrs (common sense), and as

	hours per day				Chinese tourists prefer to drive (See 5.9). The travelling duration factor should be considered)	
<b>11</b>	Interest in shortest route	X		X	Y	The shortest route that allows visiting all the tourist destination they expect (See 3.3.4) would reduce their fatigue driving (See 5.9).
<b>12</b>	Interest in time	X	X	X	Y	The length of stay can vary from 4 to 10 in average. Then, Chinese tourists that have around four days need to plan the time required for each location see point 5.5
<b>13</b>	Interest in best time and shortest route (balanced)	X			Y	This option will allow compensating both factors mentioned in this table (Interest in shortest route 11 and interest at time 12).
<b>14</b>	Interest in prioritizing the first location	X		X	Y	There are preferences when visiting tourist destinations (See 5.11.3)
<b>15</b>	Interest in routes sharing territory	X				Not important
<b>16</b>	Interest in considering the number of vehicles		X			Not important
<b>17</b>	Interest in considering current traffic		X			Not important
<b>18</b>	Round trip option		X	X	Y	Chinese tourists appreciate luxury hotels; they want to enjoy them after their journey (see 3.3.7)
<b>19</b>	Particular order in locations sequence			X	Y	There are preferences when visiting tourist destinations (See 5.11.3)
<b>20</b>	Interest in toll rds. Avoidance			X		Not important
<b>21</b>	Interest in highways avoidance			X		Not important
<b>22</b>	Interest in ferries avoidance			X		Not important
<b>23</b>	Interest in seasonal rds. Avoidance			X		Not important
<b>24</b>	Interest in time restrictions avoidance			X		Not important

25	Interest in country borders avoidance	X	Not important
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**TABLE 40 CHINESE PREFERENCES MATCH WITH NON-FEE SOFTWARE'S FACTORS**



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