

**An Analysis of Tourism Expenditure beyond
Economic Perspectives: Applying Configurational
Model and Complexity Theory**

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ABSTRACT

This study contributes to the existing literature of tourism expenditure by offering a novel analytical approach to solve complex interactions of expenditure antecedents. It also advance the theory for linkage of socioeconomic indicators of prosperity with expenditure pattern of tourists during outbound travel. This thesis tries to enlighten the significant role of other social, cultural and psychographic variables beyond economic variables, in country of origin to address emerging trend of tourism expenditure behavior at global scale. Although, a wide range of indicators were employed to predict tourism expenditure, this study explores sufficient complex configurations for simulation of both high and low scores of outbound tourism expenditures, which provide policy implications in both destination countries and countries of origin.

The thesis adopts complexity theory and fuzzy set qualitative comparative analysis (fsQCA) to analyze a composite score of 5-year data for 105 countries. By applying asymmetrical modelling, this study proposes to identify combinations of five indicators of prosperity leading to both high and low scores for tourism expenditure at the macro level. The results of predictive validity indicated that capacity of the proposed model to predict future outcome using other samples. One of the key findings of this study is the importance of socio-cultural and socio-political conditions in origin countries that consistently contribute in formulating the low level of expenditure as well the high level of expenditure as a complex behavior of tourists beyond their geographical borders. The results extends our knowledge of the asymmetrical relationships of tourism expenditure and its antecedents. Plus the fact

that, the role of global contemporary issues should take in to consideration when it comes to modelling expenditure behavior of tourist, particularly, in global scale.

Keywords: Outbound Tourism Expenditure, Prosperity, Configuration, fsQCA, Predictive validity, Asymmetrical relationships, Global crisis

ÖZ

Bu çalışma, turizm harcamalarının mevcut literatürüne, harcama değişkenlerinin karmaşık etkileşimlerini çözmek için yeni bir analitik yaklaşım önererek katkıda bulunmaktadır. Ayrıca, dışa seyahat sırasında turistlerin harcama modelleri ile bağlantılı refahın sosyo-ekonomik göstergelerinin teorisini geliştirir. Bu tez, küresel ölçekte turizm harcamaları davranışının ortaya çıkmakta olan eğilimine değinmek için, menşee ülkede ekonomik değişkenler ötesinde diğere sosyal, kültürel ve psikolojik değişkenlerin önemli rolünü aydınlatmaya çalışmaktadır. Turizm harcamalarını öngörmek için çok çeşitli göstergeler kullanılmış olsa da, bu çalışma, hem varış ülkeleri hem de menşee ülkelerinde politika çıkarımı sağlayan hem yüksek hem de düşük düzeylerdeki dışa yönelik turizm harcamalarının simülasyonu için yeterli karmaşık yapılandırmaları araştırmaktadır. Tez, 105 ülke için 5 yıllık verilerin bileşik bir puanı analiz etmek amacıyla karmaşıklık teorisini ve bulanık küme niteliksel karşılaştırmalı analizi (fsQCA) benimsemektedir.

Bu çalışma, asimetric modelleme uygulayarak, makro düzeyde turizm harcamaları için hem yüksek hem de düşük puanlara yol açan refahın beş göstergesinin kombinasyonlarını tanımlamayı önermektedir. Tahmin geçerliğinin sonuçları, önerilen modelin gelecek örneklerin diğere örnekleri kullanarak öngörme kapasitesini gösterdiğini ortaya koymuştur. Bu çalışmanın temel bulgularından biri, düşük harcama seviyesinin yanı sıra turistlerin coğrafi sınırlarının ötesinde karmaşık bir davranış olarak yüksek harcama seviyesini formüle etmeye sürekli katkıda bulunan menşee ülkelerindeki sosyo-kültürel ve sosyo-politik koşulların önemi olmasıdır. Sonuçlar, turizm harcamalarının ve değişkenlerinin asimetric ilişkileri hakkındaki bilgimizi

geniřletmektedir. Ayrıca, küresel çağdař konuların rolü, özellikle küresel ölçekte, turistin harcama davranıřını modellemek söz konusu olduęunda dikkate alınmalıdır.

Anahtar Kelimeler: Dıř Turizm Harcamaları, Refah, Yapılandırma, fsQCA, Kestirimsel Geçerlilik, Asimetrik İliřkiler, Küresel Kriz

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Chapter 1

INTRODUCTION

1.1 Overview

This chapter contains statement of problem, propose and contributions of the study to the current knowledge of outbound tourism expenditure. Tourism as one of the service industries has attracted plenty of attention last several decades, because of its enormous contribution in economic growth (Martins, Gan, & Ferreira-Lopes, 2017). By 2015, more than 1186 million tourists travelled abroad, and the export earnings generated by international tourism reached US\$ 1.5 trillion, which led to tourism being ranked as the fifth largest industry in the worldwide export category of the United Nations World Tourism Organization (UNWTO, 2016).

As a flourishing industry, tourism is a key driver of the economy in many countries. According to a 2016 UNWTO report, the Chinese spent US\$ 292 billion and the US spent US\$ 113 billion on tourism-related activities, which, in the opinion of many researchers, conveys the importance of outbound tourism expenditure with enormous marketing implications (Eugenio-Martin & Campos-Soria, 2014; Lin, Shanshan, Mao, & Song, 2015; Marrocu, Paci, & Zara, 2015). Similarly, from a policy-maker's perspective, outbound tourism expenditure functions as an import factor for the origin country of visitors and as an export factor for the destination country. Therefore, recognizing and understanding various characteristics of origin country and its different segments can be highly beneficial for policy makers, planners and tourism

marketers. Not to mention its significance at the macroeconomic levels and management in developed and developing countries (Eugenio-Martin & Campos-Soria, 2014; Seetanah, 2011; Tugcu, 2014).

Lin et al. (2015, p. 101) highlighted the paucity and worthiness of empirical research on tourism expenditure as follows: A good understanding of tourism expenditure will bring great benefits in identifying viable market segments and formulating market segmentation strategies for the tourism industry. The importance of tourism expenditure is well recognized, not only by tourism-related businesses, but also by local governments and destination marketing organizations.

1.2 Problem statement

Heterogeneous patterns of tourism expenditure, at both micro and macro levels, are escalated by the complex interactions of their antecedents (Eugenio-Martin & Campos-Soria, 2014; Jang & Ham, 2009; Lin et al., 2015; Marrocu et al., 2015). Thus, there is a keen interest in developing a new methodological approach in modelling tourism expenditure that not only addresses nonlinear and complex interactions of expenditure antecedents, but also provides deeper insights into the management of outbound tourism expenditure (Brida, Disegna, & Osti, 2013; Jang & Ham, 2009; Sainaghi, 2012; Wang & Davidson, 2010). As far as socioeconomic, cultural, environmental (e.g., climate), sociodemographic, psychological, and trip-related variables showed a conspicuous effect on expenditure modelling, it is important to have a outperform configurations modelling to forecast to what extent these antecedents at macro level can lead to high and low level of outbound tourism expenditure.

1.3 Propose of the study

This research aimed to achieve several objectives. First, it aims to develop and test a configurational model for predicting outbound tourism expenditure using complexity theory with fuzzy set qualitative comparative analysis (fsQCA). This approach is useful to obtain a deep understanding of the configurations of factors in stimulating outbound tourism expenditure. By using asymmetrical modelling, this thesis proposes to identify combinations of five indicators of prosperity that lead to both high and low scores for tourism expenditure at the macro level. The evaluation of key tenets of complexity theory with the fsQCA results enable us to explain the existence of heterogeneous features, occurrences of contrarian cases, and complex interactions of outbound tourism expenditure antecedents.

Secondly, to investigate the trend of new sub-indices/configurations in recent times that emerge in the outbound tourism expenditure modelling literature; then it proposes new instructions for future studies based on the new sub-indices and configurations identified. Predominantly, by reviewing emerging trend of recent studies and contemporary global issues, this study addresses two questions: What insights does current literature offer regarding tourism expenditure modelling? Have studies on tourism expenditure modelling contributed to tourism research from a methodological or specific sub-indices perspective?

1.4 Contribution to the current knowledge

This study seeks to contribute to the current knowledge of tourism expenditure in several ways. First, it provides new perspectives on the relationships between predictors of outbound tourism expenditure. Application of complexity theory is an advance in the theoretical reasoning as to how complex interactions of causal factors

combine to explain the occurrence of high/low outbound tourism expenditure scores. To analyze configurational models, fsQCA, a novel and powerful analytical approach that has received only limited attention in extant tourism research, was used to test the proposed model (Hsiao et al., 2015; Olya & Altinay, 2016; Olya & Gavilyan, 2016; Wu, Yeh, & Woodside, 2014). Several researchers acknowledged that tourism expenditure is a complex tourism phenomenon (e.g., Dolnicar et al., 2008; Lin et al., 2015; Wang & Davidson, 2010). There is a paucity of research on simulation of complex phenomena (e.g., tourism expenditure) in the tourism industry, and this study endeavors to fill this research gap.

The second contribution of this study to the current knowledge on outbound tourism expenditure is through the five indicators of prosperity—entrepreneurship and opportunity, governance, health, safety and security, and personal freedom—for 105 countries over five years, which are used as causal antecedents of outbound tourism expenditure. Legatum Institute (2013) provides definitions and technical information regarding prosperity indicators in their original report on methodology and its technical appendix. Crouch and Ritchie (1999) and Law and Au (2000) acknowledged that, on the whole, prosperity has integrated with tourism development. It is worthy to explore how the recipes/configurations of the five indicators of prosperity predict outbound tourism expenditure at the country level. Since data on outbound expenditure and prosperity of all countries are calculated and issued on a national scale, simulating expenditure behavior of tourists based on the conditions of the origin country increases the functionality of data for making policies at the national and international levels. In this regard, Pizam and Sussmann (1995) found that the behavioral patterns of tourists vary by nationality, which indicates—beside data type—the necessity of modelling

tourism expenditure based on the social, cultural, and economic situations of origin countries (Gholipour, Tajaddini, & Al-mulali, 2014).

The third contribution of this study to the current knowledge on outbound tourism expenditure is its consideration of the contributions of methodology and theory (application of fsQCA with complexity theory), as well as data type (antecedents of prosperity and outbound tourism expenditure of 105 countries over 5 years). To the best of the author's knowledge, this is the first attempt that provides models for both increasing outbound tourism expenditure and decreasing outbound tourism expenditure based on the integrations of indicators of prosperity of the visitor origin country. In fact, fsQCA with complexity theory helps to justify/explain why and how being top spenders or low spenders depends on the conditions of antecedents of tourism expenditure. There is no need to elaborate on the benefits of a high level of outbound tourism expenditure for destination countries (Jang, Cai, Morrison, & O'Leary, 2005). However, many countries are reluctant to be ranked as top spenders in the area of international travel because a high level of expenditure can be considered as an import of goods/services. Based on this logic, Athanasopoulos, Deng, Li, and Song (2014) advised policy-makers to focus on domestic tourism as a convenient substitute for outbound tourism. The present study calculates causal recipes for a low level of outbound tourism through exploration of sufficient algorithms of the five indicators of prosperity of the origin country.

1.5 Organization of the study

This thesis consist of six chapters including, introduction; literature review; theoretical framework; complexity theory; methodology (i.e., research design, data analysis); findings; discussion and conclusion. The next chapter presents a review of the tourism

expenditure antecedents, a conceptualization of the relationship between tourism expenditure and prosperity indicators and a critique of past analytical approaches in modelling outbound tourism expenditure. The complexity theory chapter will discuss the theory foundations and relation to tourism industry. The methodology section includes data, procedures, conceptual model and analytical approaches followed by the fsQCA results, a discussion of the findings and an evaluation of the key tenets of complexity theory. The last section provides the conclusion, limitations and theoretical and managerial implications. Moreover, the current and future global issues in tourism expenditure and connection of key gaps in literature is fully addressed.

Chapter 2

THEORETICAL BACKGROUND AND LITERATURE REVIEW

2.1 Overview

Tourism expenditure is defined as the amount paid by tourists during their trips for the procurement of services, consumption of goods and valuables, for and during entire trip (UNWTO, 2014). This expenditure includes the payment by own tourists and other expenses which are paid or reimbursed for them. Contrary to this, outbound tourism expenditure is the expenses paid by resident visitors outside of the reference economy. Furthermore, the notion of inbound tourism expenditure is the expenses in the economy of reference by nonresident visitors. Inbound and outbound tourism expenditure constitute the concept of international tourism expenditure which encompass the country residents' expenditure inside (domestic expenditure) and outside of the country of reference as well as nonresidents' visitor expenditure within the country of reference (UNWTO, 2014).

Previous studies considered different ranges of variables on tourism expenditure, such as economic, social, cultural, environmental (e.g., climate), sociodemographic, psychological, and trip-related as antecedents of tourism expenditure (e.g., Abbruzzo, Brida, & Scuderi, 2014; Eugenio-Martin & Campos-Soria, 2011, 2014; Gholipour & Tajaddini, 2014; Gholipour et al., 2014; Hong, Morrison, & Cai, 1996; Hung, Shang, & Wang, 2012; V. S. Lin, Liu, & Song, 2015; Marrocu et al., 2015; Veisten, Lindberg,

Grue, & Haukeland, 2014; Wang & Davidson, 2010a). The review revealed applied methods for estimating tourism expenditure using various types of variables. While a number of researchers have assessed the impacts of the economy (e.g., Akkemik, 2012; Eugenio-Martin & Campos-Soria, 2014; Han, Durbarry, & Sinclair, 2006; Wang, 2014), entrepreneurship (Chang, 2011), personal freedom (Gholipour et al., 2014), education, safety and security (Eugenio-Martin & Campos-Soria, 2014), and other origin-based related factors, such as climate (Eugenio-Martin & Campos-Soria, 2011), in tourism expenditure; the association of further five indicators of prosperity that simulates tourism expenditure, have remained unexplored.

Furthermore, numerous scholars have identified complex interactions among the antecedents of tourism expenditure (e.g., Brida & Scuderi, 2013; Sainaghi, 2012; Wang & Davidson, 2010). Whenever predicting variables that are subject to complex issues, such as tourist behavior, a set of combined factors must be considered to provide deeper insights into the mechanism of the occurrence of the outcome(s). This also applies to tourism expenditure where heterogeneity and sophisticated interactions of factors have been reported (Brida & Scuderi, 2013; Sainaghi, 2012; Wang & Davidson, 2010a, 2010b). In this regard, Wang and Davidson (2010b) identified heterogeneous results in an investigation of the impact of age on tourism expenditure, and Jang and Ham (2009) correctly stated that such heterogeneity could be explained by considering the simultaneous conditions of other contributors (e.g., health, social, and economic conditions). In fact, the effect of one indicator of tourism expenditure depends on the conditions of other causal factors that this study will address by analyzing the complex configurations of antecedents.

2.2 Tourism expenditure as a complex phenomena

Tourism product is a complex mix of combined services, which is provided for tourists from different market segmentation around the world. Subsequently, tourism researches have been recommended to be conducted with the consideration of multidisciplinary issues like social oriented disciplines (Jafari, 2003; Kozak & Kozak, 2013). Hereupon, There is consensus among scholars on the concept of tourism product as a complex system notwithstanding each study's different approach (Brida & Scuderi, 2013; Marrocu, Paci, & Zara, 2015; Y. Wang & Davidson, 2010b). As an instance, in tourism expenditure modelling, services being served to the highly segmented market, which participant's psychographic pattern individually or as a group (e.g. General attribute and overall concept) reflect sophisticated situation in the model (Brida & Scuderi, 2013).

Consumption behavior has to be considered as a system of explicit interactions (Abbruzzo, Brida, & Scuderi, 2014a), due to complexities in tourist destination and services/goods choice and spending. In addition, all tourism products that tourists purchase are a combination of both tangible and intangible items in which, some may not have a price tag; therefore, expenditure is a function of tangible/visible (e.g., physical), and intangible (e.g., emotional) dimensions effective variables that are interrelated and overall indivisible (Brida & Scuderi, 2013; Laesser & Crouch, 2006).

Economic crisis (Bernini & Cracolici, 2015; Bojanic, 2011; Dragouni, Filis, Gavriilidis, & Santamaria, 2016; Sato et al., 2014) is another emerging topic nowadays, which demonstrated a conspicuous impact on tourism expenditure behavior in combination with social, political and cultural factors that add to the complexities

in expenditure modelling and analysis. Migration as another emerging concept has attracted scholar's attention of its impact on different groups of tourists and their outbound expenditure pattern and need additional insight into the complex nexus between migration and tourism (Etzo, Massidda, & Piras, 2014).

The complexity of tourism expenditure modelling led scholars to put many efforts in order to solve complex interaction by addressing this system in four different approaches or combination of these as it is shown in Figure 1.

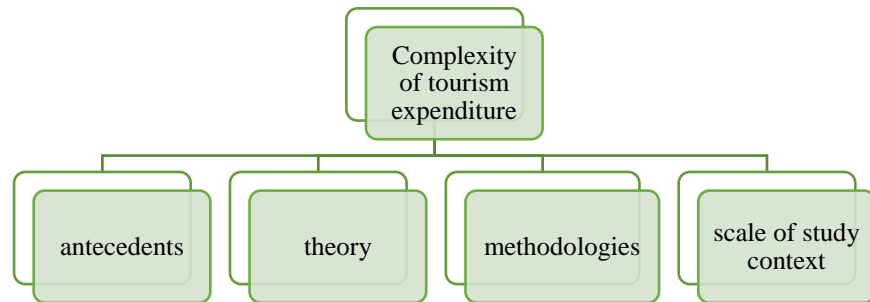


Figure 1: Addressing complexity of tourist expenditure

In recent studies, scholars attempted to model expenditure by non-economic antecedents by emphasizing on socio-economic, cultural, psychological and trip related characteristics (Wang & Davidson, 2010b). As an illustration, Brida and Scuderi (2013) mentioned the scarcity of psychological variables in the literature and tried to add authenticity perception as a factor interrelated with socio-demographic factors and visit motives, which affect the amount of personal visitor's expenditures. Fereidouni and his colleagues modeled different cultural dimensions, personal freedom and happiness as antecedents of tourism expenditure (Fereidouni, Al-Mulali, & Mohammed, 2017; Gholipour & Tajaddini, 2014; Gholipour et al., 2014; Gholipour, Tajaddini, & Nguyen, 2016). Furthermore, the role of healthcare (Hung, Shang, &

Wang, 2013), age group (Marcussen, 2011), and past behavior (Smolčić Jurdana & Soldić Frleta, 2017) have been tested and measured in this context.

Theoretical foundations for hypothesis and methodology construction had a significant role in addressing complex interactions among antecedents and dependent variables in expenditure modelling. In this regard, although the use of economic theories (e.g., Demand theories) (Abbruzzo et al., 2014a; Brida & Scuderi, 2013; Eugenio-Martin & Campos-Soria, 2014; Smolčić Jurdana & Soldić Frleta, 2017; Wang & Davidson, 2010b) dominated the literature, adoption of social theories have attracted the attention of scholars to understand the complexity of tourism expenditure.

To illustrate these points, Wong, Fong, and Law (2016, p. 960) mentioned the application of social theories in social systems and pointed out that “a social system is a complex network of hierarchical dependence, with one system nested within another”. Consequently, “environment fit, systems theory, or institutional theory consistently assert that because individual people are nested within a social system, their behavior should be understood in light of the macro-environment.” On the other hand, Gholipour et.al. (2014, p.19) developed the principle of scarcity theory by saying: “...if people feel that something is scarce, they appreciate it more. It means that if personal freedom is scarce, and people’s personal freedom is suppressed, either by strict regulations or by social and cultural barriers in a country, people may search for their own personal freedom in other countries through traveling”. Bernini and Cracolici (2015, p.192) pointed out the life cycle theory, which “assumes that the members of a household make rational choices about how much they want to spend at each age, limited only by the resources available”.

In developing methodology as an approach to tackle complex interaction of expenditure sub-indices, the majority of scholars partial consensus on developing novel methodologies or remedy the convenient methodologies, tried to use sophisticated tools in order to characterize tourist expenditure as one of tourism products (Brida & Scuderi, 2013). In accordance with this methodological novelty, numerous researches attempted to tackle the complex interrelation between antecedents with different approaches of regressions. For instance, Tobit model (Brida, Disegna, & Osti, 2013), Trobit regression (Kim et al., 2011), Quantile regression (Lew & Ng, 2012), Scobit discrete–continuous model (Wu, Zhang, & Fujiwara, 2013), and Semi-Ordered Bivariate Probit model (Eugenio-Martin & Campos-Soria, 2014) are utilized. The application of graphical models (Abbruzzo et al., 2014a) have been used in order to emphasize the complexities underlying the consumption behavior of tourists.

Geographical context has always been a logic in result differentiation and problematic in result generalization. In accordance with this fact, the environmental, socioeconomic, and cultural aspects of country of origin have been considered in some studies. For example, cultural characteristics (Wang, 2014), social/ cultural, and economic situations (Gholipour et al., 2014), climate (Eugenio-Martin & Campos-Soria, 2011), and market segmentation in tourists' origin country (Hung et al., 2012), are some of the constructs that have been considered. Furthermore, the role of destination perception on tourist expenditure behavior is also considered (Abbruzzo et al., 2014; Bernini & Cracolici, 2015). On the other hand, the diversity of results in different regions of a country leads authors to conduct a research in different region of

the same country. Accordingly, Etzo et al. (2014) reported diversity of expenditure pattern between north and south part of Sardinia in Italy.

2.3 Tourism expenditure antecedents

2.3.1 Effect of economic variable

These variables are usually measured as income level, GDP and GNP, exchange rate, cost of living at country of origin (RP), the cost of tourism in destination (SP) and economic constrain (Brida & Scuderi, 2013; Dogru, Sirakaya-Turk, & Crouch, 2017; Eugenio-Martin & Campos-Soria, 2014; Sato et al., 2014; Wang, 2014). Income as one the most repeated indices in expenditure modelling, and the most important variable in the economic restrictions subset of regressors, measured in the majority of empirical studies (Brida & Scuderi, 2013; Dogru et al., 2017). Those regressors demonstrated the positive significance for medium to high level of expenditure at individual level (Lin, Shanshan, Mao, & Song, 2015).

While at macro level, there are few studies that reported no relation found between economic factors and outbound expenditure. In addition, the evidence for negative effects of income on tourist expenditure is found in literature (Alegre, Cladera, & Sard, 2011). Therefore, the differentiation of results indicate that complexity theory is justified with respect to interference of other factors along with variation of research design and methodology, especially when factors such as crisis, absence of specific sub-indices, and different cut of the point measuring, and leakage of symmetric methods are involved. As an example of crisis and interfering variables, international tourism expenditures is considerably affected by income; however, this impact can vary under different saving regime, which means the interference of cultural factors can play a paramount role in combination with economic circumstances. As an

example of symmetric modelling leakage, in a low saving regime, increase in GDP per capita (economic), is dominant factor in tourist expenditure decision making; whereas, in high saving regime, the precautionary saving behavior (psychology) lowers the spending much on luxury goods/service (Wang, 2014).

2.3.2 Effect of socioeconomic variable

Socio-economic variables are frequently constituted of socio-demographic and some social variables in expenditure modelling. In recent tourism studies, socio-demographic variables have shown a strong effect on tourists decision making in selecting a destination to visit, as well as, how much to spend on services and products. Age is one of those variables that demonstrated different significant impact on tourist's expenditure behavior. In this regard, Bernini and Cracolici (2015) found positive effect of age on Italian household tourism expenditure, and Marcussen (2011) considered Age group as a proxy of income and significant factor for tourist spending. On the other hand, Wang and Davidson (2010b) found negative impact of age on expenditure in some studies, and explained them based on complex set of socio-demographic characteristics of travelers. Testing and measuring gender differences have been also discussed in the literature. However significant relationship between gender and tourism expenditure rarely explored by the researchers (Brida & Scuderi, 2013). Such discrepancies have been explained due to variations of attributes in socioeconomic forces and time cycles which can create boundary conditions to the demographic effects (Wong et al., 2016). Another study measured age variable in combination with other socio-demographic variables to find meaningful result which indicated married and male participants spend more money in compare to single and female tourists (Sato et al., 2014).

Occupation is another variable within socio-economic category which attracted scholars' attention due to significant results they have produced (Brida & Scuderi, 2013). Nevertheless, different scholars revealed their results in different forms. For instance, Eugenio-Martin and Campos-Soria (2011) revealed that general managers and self-employed professionals are more likely to travel, which is in contrast to unemployed, manual workers, and Business owners who might have less intention to travel. On the other hand, Kim et al. (2011) demonstrate that professional workers spend less in specific tourism sector, and Lin et al. (2015), reported that there are studies which found no relationship between occupation and tourist expenditure.

Education as other controversial variable is frequently considered in empirical studies in the form of schooling years and the levels of degree/diploma (Marrocu et al., 2015). Bernini and Cracolici (2015) pointed out that education has had great impact as an indicator of tourism expenditure; they justified this fact due to the higher-level of employment and higher income. In accordance, Hung et al. (2012) justified this positive impact, because highly educated people are more communicative and knowledge oriented; therefore, they have more willingness to spend. In contrast, Brida and Scuderi (2013) reported that education variable rarely turn out to be significant in the group of heavy spenders.

2.3.3 Effect of cultural variables

Countries and Regions with diverse culture and ethnicities form a heterogeneous behavior in terms of travelling at macro and micro levels. Therefore, it is logical that tourism operators should focus on tourist's origin and understand their behavior while packaging tourism products (Cho, 2010). In accordance with this background, attribute of place of origin mentioned as an important variable in some studies (Etzo et al., 2014;

Eugenio-Martin & Campos-Soria, 2014; Wang & Davidson, 2010a, 2010b). Furthermore, Li and his colleagues, in their discussion of the prominence of attraction in country of origin, referred to domestic and inbound tourism expenditure in China realized that there is a greater effect on the choice of country in comparison to the scale of Chinese outbound tourism (Li, Huang, & Song, 2017). As an example of households in micro level, Eugenio-Martin & Campos-Soria (2011) determined that individuals living in large a community are more probable to participate in tourism activities.

Furthermore, cultural difference between two areas in a same country demonstrate different expenditure behavior of household, consequently, this evidence can be another clue that enlighten the role of non-economic variables when economic indicator is the same in a country at micro level (Bernini & Cracolici, 2015). As far as people who are living in different regions demonstrate various behavior toward tourism demand, there are varieties of cultural dimensions in studies as cultural representative factor that have impact on expenditure behavior. As an instance, six cultural dimensions from 49 countries over six years has been researched in study of Gholipour and Tajaddini (2014) and they found 4 of these dimension, significantly correlated with types of outbound tourism and outgoing tourist expenditure then suggested to policy makers to consider the cultural background of their target tourists in developing tourism policy.

2.3.4 Trip related characteristic

Length of stay, size of the travel party, time of the trip and its typology, accommodation, payment method, means of transport, number of visited sites, trip purpose, stopovers in other destinations, information acquisition behavior and

reservation type and other travel intermediaries are the most repeated variables in the literature on trip related characteristics (Song & Li, 2008; Wang & Davidson, 2010b). According to Brida and Scuderi (2013), length of stay is found to be positively significant with tourism expenditure in majority of studies. On the contrary, some studies found a negative effect for the length of stay. For instance, Thrane and Farstad (2011) found that the more length of stay, the less positive effect tends to appear in expenditure. Travel party size is another repeated variable which is found to be significant, with both positive effect (Craggs & Schofield, 2009), as well as negative effect (Alegre et al., 2011; Wu et al., 2013).

Other environmental characteristic of country of origin in comparison to destination (e.g., climate, natural resources, and transportation) discussed in several studies, which attract travel spending decision of tourist (Eugenio-Martin & Campos-Soria, 2014). Climate, as the element of decision making process, can play a role as pull factor or push factor to travel domestically or internationally for UK resident tourists (Song & Li, 2008). Good climate and having access to coastal areas play a significant role in increasing domestic tourists (Eugenio-Martin & Campos-Soria, 2011).

2.3.5 Psychographic variables

Psychological variables include tourists' evaluation of their holiday/vendor, tourists' sociological characteristics, their motivation and taste; can be found as the most frequented applied antecedents in expenditure modelling. Due to scarcity of data set in regard of psychological characteristics of tourists (Brida & Scuderi, 2013), recently, scholars have tried to model expenditure by new antecedents in this area. For instance, Jurdana and his colleague added tourist satisfaction dimensions in to their expenditure modelling and they found significant relationship between one dimension and the

dependent variable (Smolčić Jurdana & Soldić Frleta, 2017). Alegre et al. (2011) reported that historical and cultural visitors spend more than “sun and sand visitors” do. Limited personal freedom considered as a push factor in country of origin for outbound tourism. Interestingly, differentiation in personal freedom (i.e., the difference between personal freedom of destination and personal freedom of home country) positively related to tourism expenditure (Gholipour et al., 2014). In another study, nations with high national happiness index, showed a positive correlation between long-term international travel and tourism revenue (Gholipour et al., 2016).

Veisten et al. (2014) revealed that, higher expenditure is associated with higher score of environmentalism, optimism and inspiration. In addition, they demonstrate that, visitors, who seeking of excitement and danger had lower expenditure in total. However, the number of the studies which reviewing psychographic variables, is on rise in these years, mostly all these studies recommended for future studies to focus more on testing new variables in this category.

In table1, we provide a summary of expenditure category antecedents of 39 recent studies (since 2010), which their focus was outbound expenditure and has been discussed in this section.

Table 1: Summary of outbound tourism expenditure category antecedents of relevant study on outbound expenditure

Authors	Year	Antecedents of outbound tourism expenditure				
		Economic	Socio-economic /social	Psychology	Culture	Trip related
Abbruzzo, Brida, & Scuderi	2014		×			×
Abbruzzo et al.	2014		×	×		×
Aguiló, Rosselló, & Vila	2017					×
Alegre & Cladera	2012			×		×
Alegre & Pou	2014	×	×			
Alegre & Pou	2016	×	×			×
Almeida & Garrod	2016	×	×			×
Bernini & Cracolici	2015		×		×	
Bojanic	2011		×			
Brida et al.	2013		×	×		×
Brida & Scuderi	2013	×	×			×
Cárdenas-García, Pulido-Fernández, &	2016			×		

Pulido-
Fernández

Dragouni et al	2016			×		×		
Etzo et al.	2014	×		×		×	×	×
Eugenio-Martin & Campos- Soria	2011							
Eugenio-Martin & Campos- Soria	2014	×						
Fereidouni et al.	2017	×						
Gholipour & Tajaddini	2014						×	
Gholipour et al.	2014					×	×	
Hung et al.	2013	×		×				
Kim, Park, Lee, & Jang	2012							
Kim et al., 2011	2011	×		×		×		×
Lew & Ng	2012			×				
Lin et al.	2015	×		×				
Marcussen	2011			×				×
Marrocu et al.	2015			×		×		×

Medina-Muñoz & Medina- Muñoz	2012		×		×		×
Saayman & Saayman	2015	×					
Sato et al.	2014	×	×		×		
Seetaram	2012	×	×				
Smolčić Jurdana & Soldić Frleta	2017	×			×		×
Sun, Lee, & Chen	2015	×	×				
Veisten et al.	2014	×			×		×
Wang & Davidson	2010	×	×		×	×	×
Wang & Davidson	2010	×	×		×		×
Wang, 2014	2014	×				×	
Wong et al.	2016	×	×				
Wu et al.	2013	×	×				×
Xiang	2013	×	×		×		

This table shows the application of main variables in each studies and Figure 2 demonstrate the distribution of these articles in 14 different journals. Based on the result of systematic review, minimum 55% of studies, tested pure economic variables such as income and income level in their studies. As far as economic theories are bases of tourist expenditure modelling, the majority of studies, measured and reported economic sub-indices, however, the number of studies, which considered and measured economic variables as a main expenditure antecedents are decreasing in recent years. In other words, the role of non-economic variable is being more significant in expenditure modelling.

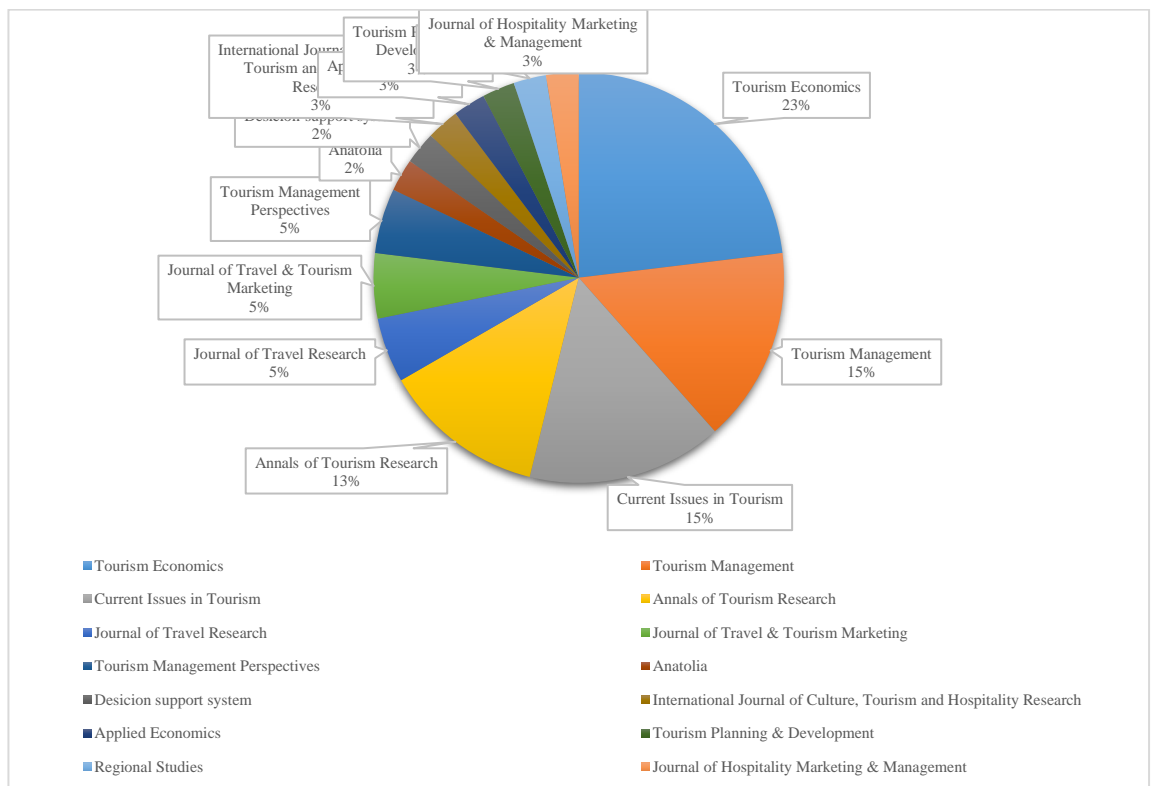


Figure 2: Frequency of studies based on journals

The application of socioeconomic variables can be seen in 67.5% of studies in this review. While, 80% of those studies, used the socio-demographic variable in the group of socio-economic variable and other 20%, belong to social variable like political

situation in country of origin, the role of governance, health care and safety and security recently, which recently attracted focus of scholars in this regard. Trip related variables achieved the rank of third most frequented group variable among five groups with the share of 45% of whole researches. About 42.5% of mentioned studies considered psychographic variables and surprisingly, cultural variables attracted minimum attention of scholars in modelling tourism expenditure with the share of 7.5% of all studies. As a visual results of table 1, Figure 3 demonstrates the region frequency of each of five groups in comparison to each other in all 39 studies. Conspicuously, future studies could recognize the cultural distinctiveness of respondents in both national scales and regional diversification, which needs both analytical approach at micro and macro level. As it is shown, in the table 1, the role of psychographic variable attracted scholar’s point of view in model development, which was not routine and usual like socio-demographic, and trip related variables in studies before 2010.

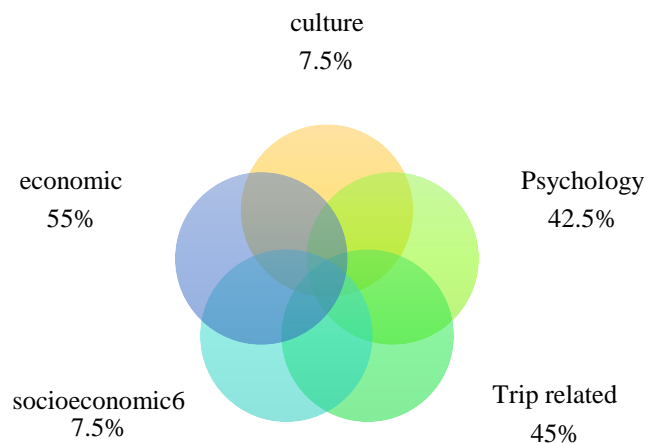


Figure 3: Frequency of group variables in study

Figure 4 illustrates the distribution of research conduction in different continent apart from (three) review articles. In our division, for Asia we considered Middle East and

Asia Pacific in two separate groups. This division is due to the importance of some countries in Asia Pacific such as China, which has been the first top spender country since 2012 (UNWTO, 2016) and considerable studies are found as Chinese outbound tourism expenditure.

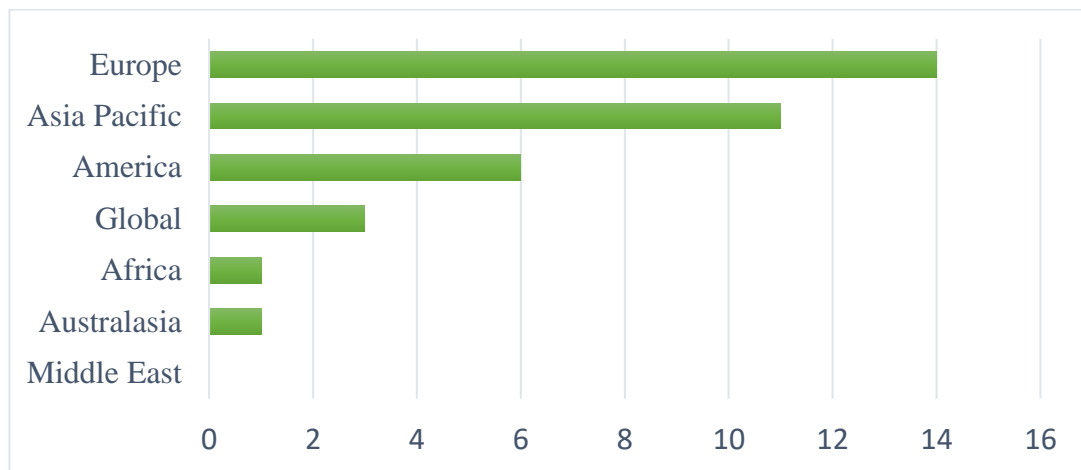


Figure 4: Geographical frequency of studies based on continents

Interestingly, there is no study in our sample studies, which considered one of the Middle East countries in regard of tourist outbound expenditure behavior. Accordingly, in our samples, there are only three studies analyzed approximately global data (countries in different continents), that depict expenditure pattern of tourist in comparison to others. We have reviewed only one study for Africa (South Africa) and one for Australasia. Contrary to minimum attention to North Africa for both outbound and inbound expenditure, there are some scholars forecast tremendous number of tourists in north touristic destinations of this continent (e.g., Saayman & Saayman, 2015). The most studied countries in Europe are Spain and Italy and in Asia Pacific are China, Hong Kong, Macau and Taiwan. United States as the second top spender country in the world (since 2012) (UNWTO, 2016) is impressively being

researched in studies based on both household expenditure and country level in 15% of sample studies.

Compatible with the results, European countries are being researched in regard of residence pattern of expenditure. Europe is the most visiting continent in 2016 and, European are placing after Chinese and Americans among top spenders in the world. However, there are only some countries, which are being studied in this regard, and the results of those studies are generalized at each level. Consequently, data collection locations in expenditure modelling is limited to some specific region and countries in all studies. This important can be result of leakage in non-English academic environment or expert academicians of this field in other destinations or lack of scholars' interest in unexplored areas.

Nevertheless, the mentioned nexus vague among antecedents of expenditure in complex modelling need to be addressed by both global data analysis and expansion of geographical contexts. Since, tourist geographical differences in country of origin can provide market managers with useful information in regard of their expenditure pattern. Plus the fact that, different geographical region in country of destination can also draw informative map of destination attribute impact on tourist spending behavior. This study recommend different configuration models for different countries, which are remained unexplored in outbound expenditure behavior pattern in comparison with other countries in global scale.

2.4 Tourism expenditure methodologies

Two main approaches in expenditure modelling dominate the literature, econometrics model and graphical model. At the same time, there are two econometrics model for

the analysis of individual consumption. The first one is based on the demand of tourism products and level of expenditure, which is dependent upon socio-demographic, trip-related, psychographic, and budget constraints as sub-indices. The second one is based on random utility models, which measures the probability of tourist expenditure (Abbruzzo et al., 2014a; Brida & Scuderi, 2013). Except for econometrics, graphical model is rarely used to measure interrelationships between couple of nodes that exist conditionally in the entire network of nodes (Abbruzzo et al., 2014a). In the meantime, regression models quantitatively measure the availability and extent of conditional interrelation among antecedents of dependent variable; whereas, graphical model qualitatively measures conditional interrelationships between couple of nodes in the entire network of nodes. Unlike complex fuzzy models and regression model, which are based on behavioral theoretical foundation, graphical models limited to mere commentary of conditional probabilities in graphs and accentuate the complexities underlying the consumption behavior in a system of explicit interactions.

Modelling tourism expenditure at macro level with ordinary methodologies (i.e., time series, cross sectional studies) conducted since the early existing studies that demanded expenditure modelling (Cho, 2010; Eugenio-Martin & Campos-Soria, 2011; 2014). In accordance with the advantages of international scale, we can point out the analyses of travel expenditure in the country of origin or destinations and make a comparison between international spenders, which is fruitful for policy, and managerial implications in business organizations or national scales (Wang & Davidson, 2010a; 2010b). On the other hand, micro-economic modelling at individual level have found to be more noteworthy in recent studies due to many advantages. First, diversity and heterogeneity of consumer behaviors in a particular market segment. Second, tourism-

related statistics (e.g., expenditure) are issued on a national scale (i.e., country), Third, the modelling of predictions of countries tourism expenditure helps businesses that are interested in target marketing in international scales. Consequently, the majority of researches worked on Micro-data analysis (e.g., expenditure per person per day, total travel expenditure, total party expenditure) with the aid of econometrics methodologies and classical regression techniques (Brida & Scuderi, 2013; Wang & Davidson, 2010b).

Eventually, based on methodological point of view of this thesis, the numerous scholars acknowledge that, tourism expenditure needs to be modelled and measured with novel methodologies and approaches in order to explain complex issue of tourism expenditure. (Brida & Scuderi, 2013; Dolnicar et al., 2008; Lin et al., 2015; Wang & Davidson, 2010b). In accordance with this concern, some recent studies tried to conduct new theories to meet the literature gaps in this regard. As an instance, Gholipor et al. (2014) addressed scarcity theory, and mental budget theory applied for visitors shopping expenditure in Christmas market (Brida & Tokarchuk, 2017). As far as consensus of majority of scholars in regard of complex issue of outbound tourism expenditure, methodological wise, this thesis is recommending asymmetrical modelling. This recommendation is based on four reasons, which justified in following sentences.

First, results of noticeable studies in social science researches proved the supremacy of nonlinear methodologies in reporting accurate analysis. In accordance with this achievements, Ferrara and his colleagues, in their study showed, in economic forecasting, nonlinear macroeconomics modelling leads to enhance accuracy up to

45% in comparison to conventional linear modelling (Ferrara, Marcellino, & Mogliani, 2015).

Second, based on result of macroeconomics studies, numerous scholars reported the asymmetric behavior of tourist in different phases of business cycles, which no study to date, reviewed and mentioned the number of articles considered unsymmetrical concern in their methodology application. As an instance, Smeral and Song (2015) indicated that consumer behavior obeys asymmetrical trend, which means tourist behavior in one phase of the cycle is not the mirror image of its opposite phase (Bjellerup & Holgersson, 2009; Gunter & Smeral, 2017; Smeral & Song, 2015). This also applies to tourism expenditure where heterogeneity and sophisticated interactions of factors have been reported (Dolnicar et al., 2008; Jang & Ham, 2009; Lin et al., 2015; Wang & Davidson, 2010).

Third, when predicting variables that are subject to complex issues, such as tourist behavior, a set of combined factors must be considered to provide deeper insights into the mechanism of the occurrence of the outcome(s).then again, the role of symmetric and asymmetric modelling would demonstrate two different side of analysis in this regard.

Forth, fluctuation in global economic and global socio-political issues causes change in consumer expectation of income, income sources, expectation of expenditure allocation in crisis, and demand elasticities, which vary over time and from products to product in tourism industry. Therefore, application of asymmetrical approaches, in accordance with different modeling methods and data frequencies generate different

future estimation of tourist demand and consumption (Peng, Song, Crouch, & Witt, 2015).

Although, numerous recent studies mentioned the complex interaction between outbound tourism expenditure antecedents, there are still some nexus vague in regard of configurations of expenditure modelling and methodologies to address differentiation in impacts of expenditure antecedents on international scale. Future research should strive to achieve greater methodological rigor and vigor.

2.5 Prosperity role in tourism expenditure

According to Jones and Woodbridge (2011), “Prosperity is the state of flourishing, thriving, good fortune or successful social status. Prosperity often encompasses wealth but also includes other factors, which can be independent of wealth to varying degrees, such as happiness and health” (2011, P. xxv).

Crouch and Ritchie (1999), Law and Au (2000) acknowledged that, prosperity has integration with tourism development. It is logical to explore how the recipes/configurations of the sub-indices of prosperity predict tourism expenditure at the national level. Since data on outbound expenditure and prosperity of all countries are calculated and issued on a country scale, simulating expenditure behavior of tourists based on the conditions of the origin country increases the functionality of data for making policies at the national and international levels. In this regard, Pizam and Sussmann (1995) found that the behavioral patterns of tourists vary by nationality, which indicates—beside data type—the necessity of modelling tourism expenditure based on the social, cultural, and economic situations of origin countries which is also reiterated (Gholipour et al., 2014).

In moving to "Gross domestic product and beyond" to cover both wealth and well-being, and not only either, the Prosperity Index confronts the test of finding an important measure of national achievement. The Economics wise of Prosperity seeks to what extent policy-makers can develop legal, economic and governance environments which, bring increased economic movement, create jobs and help people with lifting out of poverty and misery as well as producing researches, seminars and panels in the aforesaid areas, to make progress on country studies that recognize the limitation to economic growth. (Legatum Institute, 2013). One of an increasingly significant issue for public is economic growth, prosperity and their relation to sustainable environment, which is missing in the newly emerging researches (Drews & Van den Bergh, 2016).

2.6 Conceptualization

This thesis attempts to address this question: ‘under *what conditions of prosperity countries are recognized as top spenders, and/or relegated to an inferior position*’? In other words, how do we attune the antecedents of country's prosperity to achieve high outbound tourism expenditure and also predict conditions leading to a low level of expenditure? The answers provide implications for target marketing at a country level. Many previous studies focused on predicting tourism expenditure at the individual level, but few studies have assessed it from a cross-national perspective (Cho, 2010; Eugenio-Martin & Campos-Soria, 2014). It is important to model tourism expenditure at a national level because many tourism-related statistics (e.g., expenditure) are compiled on a national scale (i.e., country), and the formulation of predictions of tourism expenditure of countries helps businesses that are interested in targeting/expanding new international markets. For example, Georgantopoulos (2012) specifically forecasted a growing trend of tourism expenditure from 2012 until 2020.

After a careful review of the literature, this research revealed that that several studies reported supportive links between prosperity antecedents and tourism expenditure. For example, Gholipour et al. (2014) assessed the role of personal freedom, Eugenio-Martin and Campos-Soria (2014) examined safety and security, Chang (2011) investigated entrepreneurship, Bernini and Cracolici (2015) focused on education and Medina-Muñoz and Medina-Muñoz (2012) assessed health and wellness conditions as indicators of tourism expenditure. As shown in Table 1 of the literature review, the majority of previous studies identified a type of socio-economic factor for formulating tourism expenditure (e.g., Lin et al., 2015; Marrocu et al., 2015), while some studies (e.g., Gholipour et al., 2014; Wang, 2014) stressed the significance of cultural and social (e.g., personal freedom) factors in the formulation of tourism expenditure.

According to one definition, “prosperity is the state of flourishing, thriving, good fortune and/or successful social status” (Szabo, Ferencz, & Pucihar, 2013, p. 2). Legatum Institute offered a prosperity index that includes eight antecedents. An exploration of the association between prosperity factors and outbound tourism expenditure can help policy-makers of countries of origin to set prohibitive strategies, based on the configurations of the prosperity indicators, to ensure that their citizens spend less during outbound travel. Destination countries can use the outcome of this study as a guideline to perfectly manage outbound tourism expenditure by developing strategic target marketing.

Chapter 3

COMPLEXITY THEORY

3.1 Overview on complexity

Formally, complexity refers to a situation, which is characterized by very complicated or involved arrangements of parts, units, etc. (www.dictionary.com) and /or beyond ordinary usage of language, which is intricate or ‘difficult to understand. Although, complex phenomena and systems are undoubtedly intricate in arrangement, and maybe difficult to understand practically, the complexity science has exclusive idea of what complexity is. Scientists have wide range of in depth definition for complex system: Cudworth & Hobden, (2013 p. 4–5), define it “more than merely the sum of its parts”. Precisely, complex systems emerge from how its components work in relation with each other and between parts of complex system seems to be non-linear relations, and so forth. Therefore, emergence is the most significant notion in recognizing whether the system is properly complex, or just complicated (Byrne, 1998).

Complexity theory is a combination of formal concepts, which can lead to address dynamics, structures, and operation of complex phenomenon in order to understand complex system (Williams, 2015). Complexity theory has extended from the mathematics and natural science into the social sciences and humanities. Other pioneer of the ideas of complexity are “Alfred North Whitehead, William James, Friedrich Nietzsche, and Henri Bergson, as well as, Gilbert Simondon, Gilles Deleuze, and Félix Guattari” (Connolly, 2013, p. 29). Finally, Complexity theory is defined as:

“A set of concepts which tries to explain complex phenomenon not explainable by traditional (mechanistic) theories. It integrates ideas derived from chaos theory, cognitive psychology, computer science, evolutionary biology, general systems theory, fuzzy logic, information theory, and other related fields to deal with the natural and artificial systems as they are, and not by simplifying them (breaking them down into their constituent parts) complex behavior emerges from a few simple rules, and that all complex systems are networks of many interdependent parts which interact according to those rules”. (<http://www.businessdictionary.com/definition/complexity-theory.html>).

Rechtin and Maier suggest that a complex system is a set of elements connected in order to perform a *unique function* that cannot be achieved by any of the parts alone. In their view, a complex system may be approached at different levels of abstraction, each with its own techniques for problem solving (as cited in Ferreira, 2001, p. 2).

Complexity theory explains and describes the behavioral patterns of complex adaptive systems. It depends on ontological realism and backings of the view that events happen autonomously. Since philosophy is portrayed by nonlinearity, there are no all-inclusive norms or important regular structures in the society. In any case, the framework is not uncontrolled, and even in chaotic circumstances there is some kind of order. Regardless of the possibility that the framework seems to work in an arbitrary and complex path with every component, appearing to act independently and inside particular limits. Subsequently, intricacy develops after over time. “Complexity theory focuses on three aspects: (1) the simple behaviors emerging from complex systems; (2) the higher-level patterns produced by simple interactions; and (3) the identification

of recognizable patterns under a holistic examination of the complicated system.”
(Papatheodorou & Pappas, 2017, p. 664).

3.2 Fuzzy set analysis qualitative comparative analysis (fsQCA)

“Fuzzy Set Qualitative Comparative Analysis” “fsQCA” is a method, which use for to analyses complex configuration and summarizing linguistic data, which are related with cases. It was pre-empted by the Charles Ragin, social scientist. The advantage of this qualitative method is, seeking to find logical connection between “combinations of causal conditions and outcome”, while, other qualitative method, originated from correlations. The result of “fsQCA” summarize the sufficiency between subsections of all of the possible “causal conditions combination” and the outcome. Prof. Rain, believes that, as far as social causes and effects are not always proper black or proper white, fuzzy set are uses in QCA to define a matter of degree (Ragin, 2014). Moreover, this leveling in analysis makes difference with other conventional truth table by constructing a Boolean truth table. The main theory behind casual complexity is subset hood relationship, which means the consistency degree in cases with subset relation. The final goal is to stablish the sufficient combination of condition for the intended outcome (Mendel, Korjani, 2012).

As an example in thesis case, although some countries have high level of personal freedom and some do not have, there are broad ranges of in-between cases. There are some countries, which neither have full personal freedom, nor can be fully excluded from this set. As another advantage of Fuzzy sets, we can point out to the calibration of partial membership, which allows researchers to use the interval value between (0) to (1) from nonmember ship to fully membership with serving the core theoretic principles.

Regarding to the critical prominence of variables relationship in complex situation, Woodside (2014), in his article mentioned that, “Relationships between variables can be non-linear with abrupt switches occurring, so the same cause can, in specific circumstances, produce different effects” (Urry, 2005, p. 4). “If a system passes a particular threshold with minor changes in the controlling variables, switches occur such that a liquid turns into a gas, a large number of apathetic people suddenly tip into a forceful movement for change; Such tipping points give rise to unexpected structures and events” (Urry, 2005, p. 5). These astute explanation can open discussion in our case, as following: one variable like economy can show positive effect on outbound tourism expenditure individually, while this variable in combination configuration with other socioeconomic variables in a complex system can cause unexpected structures in specific case to extent that the effect of it can vary from negative impact or neglecting impact on expenditure.

3.3 Complexity and supremacy in socio-economic science

The literature on complexity theory is expansive and heads in several perceptible directions (Woodside, 2014). In current issues, we can point out to economic and fiscal crisis, which began in 2008s (Eugenio-Martin, & Campos-Soria, 2014), to the ongoing threat of anthropogenic climate change and global warming (Olay, and Alipour, 2015) which are some aspects of complexity problems (Williams, 2015). However, crisis roots has been found in the complexity of financial system, but beyond of the financial, in recent years we have seen ever-increasing globalization, which is the combination and complexification of global supply chains, growing global flows of labor and capital, and the strengthening of more complex arrangements of identity and subjectivity (Mirowski, 2002; 2013). Each of these mentioned issues is lead to the interconnectivity and complexity of political and Scio-economic systems.

3.4 Application of complexity theory in service industry

Several theories can theoretically support the proposed model for predicting tourism expenditure. For example, Berbegal-Mirabent, Ribeiro- Soriano, and García (2015) considered several types of variables with complex interactions for modelling tourism expenditure; however, while the current theories are necessary, they are insufficient. Baggio (2008) used complexity theory to address a non-linear and complex model that combined a large number of interacting components. Similarly, Pappas, Kourouthanassis, Giannakos, and Chrissikopoulos (2015) suggested the application of complexity theory for analyzing a complex configuration of indicators, contrarian cases, and asymmetric relationships. Complexity theory has been used for developing theories in many fields, such as the natural and social sciences (e.g., McClelland, 1998; Urry, 2005), hospitality and tourism (Hsiao et al., 2015; Olya & Altinay, 2016; Olya & Gavilyan, 2016; Wu et al., 2014), and marketing (e.g., Gummesson, 2008; Kotler, 1967; Woodside, 2014, 2015), which provide a deeper insight into combination patterns of causal factors in simulating outcome conditions. Wu et al. (2014) applied complexity theory to simulate customer behavior in the beauty industries. Olya and Altinay (2016) applied fuzzy set qualitative comparative analysis with complexity theory to predict both high and low degrees of tourist weather insurance purchase intention and destination loyalty. Moreover, Hsiao et al. (2015) used complexity theory to address the occurrence of contrarian cases in the work performance of hospitality employees. This thesis viewed complexity theory as a necessary and sufficient theoretical background on configurational models for predicting outbound tourism expenditure. This thesis evaluates the results of configurational modelling with key tenets of complexity theory.

Chapter 4

METHODOLOGY

4.1 Why configurational modeling?

In conventional symmetrical approaches, multicollinearity issues, non-normality of data sets, disregard of occurrences of contrarian cases and ignorance/control of other factor effects in the model are some issues that can provide misleading results (Armstrong, 1970; Woodside, 2013, 2015). Kotler (1967, p. 1) stated that “marketing decisions must be made in the context of insufficient information about processes that are dynamic, nonlinear, lagged, stochastic, interactive, and downright difficult.” It is also difficult to accept that the results of linear modelling and symmetrical thinking/analyses (e.g., regression and correlation) explain the relationship between tourism expenditure and its antecedents well (Kuo & Lu, 2013; Rashidi & Koo, 2016). Thus, an appropriate approach is required for explaining such complex issues. This study applies configurational modelling for predicting outbound tourism expenditure using fsQCA with complexity theory to mitigate the aforementioned methodological concerns. It is feasible to model both high and low degrees of outbound tourism expenditure.

In conventional symmetrical research (e.g., regression analysis), models for predicting a high score of tourism expenditure are considered to be the mirror opposites of models for simulating a low level of tourism expenditure. For example, the economy has a significant and positive relationship with tourism expenditure. This means that a good

economy can result in a high tourism expenditure score, and a bad economy can lead to a low tourism expenditure score. However, such studies completely ignored the occurrences of contrarian cases. In other words, there are some countries that are not powerful economically (e.g., Russia) or do not have a great regard for personal freedom (e.g., Saudi Arabia), but are still good spenders. As Woodside (2013, p. 2) suggested, considering net effects in asymmetric methods is misleading because, Cases counter to the observed net effects nearly always occur, simultaneously, not all the cases in the data support a positive or negative relationship between the dependent and independent variables. Therefore, it is necessary to show the combinatory conditions for which X is a negative influence on Y as well as the combinatory conditions when X is a positive influence on Y. Hence, causal conditions for predicting low values of outbound tourism expenditure are not necessarily the same as algorithms for predicting high levels of outbound tourism expenditure. Complexity theory enables simulation of causal conditions for both high scores of tourism expenditure as well as their negation (low scores of tourism expenditure).

4.2 Proposed configurational model

In the present study, a complex configurational model for predicting high and low scores of outbound tourism expenditure has been developed and tested based on six tenets of complexity theory. According to the guidelines set out by Duşa (2007), a Venn diagram illustrating five antecedents of prosperity represents recipe ingredients for predicting high and low levels of outbound tourism expenditure (as outcome conditions) (Figure 5). Asymmetric modelling of outbound tourism expenditure with fsQCA helps to justify the occurrence of contrarian cases, heterogeneity properties of antecedents, multicollinearity issues, and non-normality of data which advance theory using Boolean-based algorithm analysis. As illustrated in Figure 6, configurational

models for a high value of outbound tourism expenditure are useful for policy-makers in destination countries, while causal algorithms for negation (low score) of outbound tourism can be used as guides for demonstrating how to regulate policies of the origin country to reduce outbound tourism expenditure.

4.3 Data

Economy, entrepreneurship and opportunity, governance, education, health, safety and security, personal freedom, and social capital are eight sub-indices of prosperity used as predictors of outbound tourism expenditure.

Data of eight indicators were collected from the Legatum Institute databases (http://media.prosperity.com/2015/xls/2015_Variables.xlsx) and data on outbound tourism expenditures were obtained from the World Bank (<http://data.worldbank.org/indicator/ST.INT.XPND.CD>) for 105 countries over five years (2009–2013), since countries experience various fluctuations, such as those of exchange rate, over time. To mitigate this issue, a composite score, using 5-year data (from 2009 to 2013), was calculated to provide more realistic and reliable measures for model specification asymmetrical modelling. The number of countries and data period was selected based on the availability of the matched data of eight indicators with outbound tourism expenditure.

In the Appendix B and Appendix C, all tables include name of the countries, prosperity sub-indices scores and expenditure values are provided.

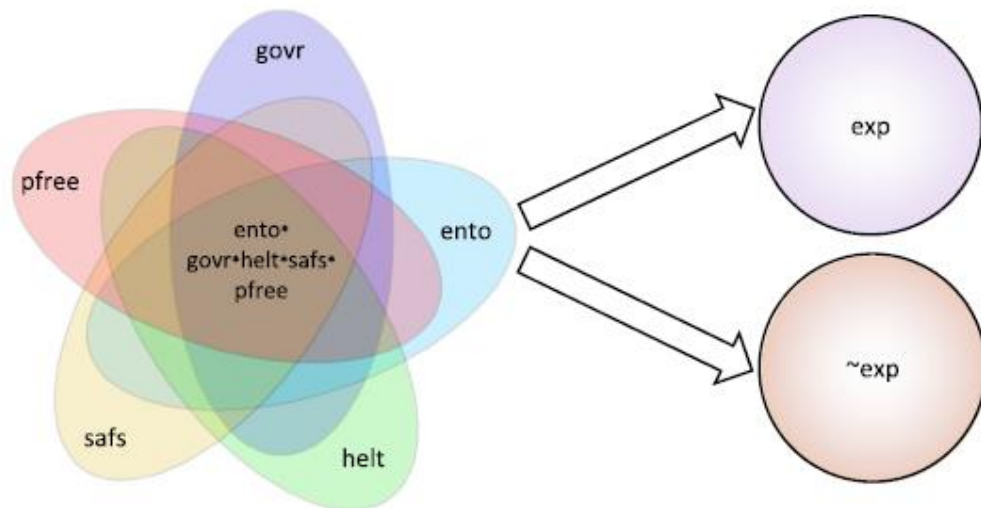


Figure 5: Complex configurational model

Note: exp: expenditure; ento: entrepreneurship & opportunity; govr: governance; helt: health; safs: safety & security; pfree: personal freedom.

4.4 Data analysis

We conducted a set of preliminary symmetric analyses to not only take advantage of the symmetric approach for model specification, but also to highlight the drawbacks of conventional studies in formulating tourism expenditure (Armstrong, 1970; Woodside, 2013). Specifically, regression and variance inflation factor (VIF) tests were conducted to demonstrate heterogeneity and multicollinearity issues in predicting outbound tourism expenditure. Then, asymmetric modelling was performed using fsQCA (Ragin, 2008) to explore combinations of causal factors (causal complexity with five indicators) that led to the outcome (outbound tourism expenditure). A new technique, fsQCA, is used for simplifying complex interactions of factors using Boolean algebra truth tables in a logical and holistic manner (Ragin, 2014). The two main steps involved in fsQCA are these: the calibration of factors and the fuzzy truth table algorithm (Fiss, 2011; Ragin, 2008). These processes are conducted using fsQCA 2.5 software (fsQCA 2.5, available at www.compass.org).

Calibration is the transformation of values of antecedents (five causal conditions) and outcome (expenditure) into fuzzy set membership scores. To achieve this, three qualitative anchors, namely, full membership in a set with a value of 1, a crossover point with a value of 0.5, and full non-membership in a set with a value of 0, must be specified for all variables. Ragin (2007) considered calibration, 0.95 and 0.05, as the threshold of full membership and full non-membership in the target set, respectively. Because producing set membership scores of exactly 1.0 or 0.0 is mathematically incapable for the data in this study, “these two membership scores [1.0 or 0.0] would correspond to positive and negative infinity, respectively, for the log of the odds” (Ragin, 2007, p.8).

After transformation of the values of the five antecedents and outcome condition (expenditure) into fuzzy set membership scores, a truth table was generated and refined. The truth table provided a list of combinations of causal antecedent conditions (or sufficient configurations) that led to the outcome condition. The truth table demonstrates all possible configurational conditions for predicting the outcome, which should be refined based on two criteria: frequency and consistency (Ragin, 2008). To predict the occurrence of both high and low scores for expenditure, “1” was considered as the cut-off of frequency (minimum number of cases required for a solution to be considered) and “0.80” as the threshold of accepted consistency (minimum consistency level of a solution) (Hervas-Oliver, Sempere-Ripoll, & Arribas, 2015; Ragin, 2008).

Metrics of “consistency” and “coverage” in fsQCA are analogous with the “correlation” and “coefficient of determination” in symmetric methods, respectively

(Ragin, 2008; Woodside, 2013). The formula for calculation of consistency was $(X_i \leq Y_i) = \frac{\sum\{\min(X_i, Y_i)\}}{\sum(X_i)}$, and the formula for coverage was $(X_i \leq Y_i) = \frac{\sum\{\min(X_i, Y_i)\}}{\sum(Y_i)}$ where X_i was case i 's membership score in set X and Y_i was case i 's membership score in the outcome condition. Numerical examples are provided in Ragin's (2008) original work. Results of configuration analysis using the Quine-McCluskey algorithm presented consistent and sufficient configurational paths (complex combinations of causal antecedents) for predicting a high level of outbound tourism expenditure. The fuzzy truth table algorithm procedure was repeated for exploring recipes (configurational paths) leading to a low outbound tourism expenditure score (or negation of outbound tourism expenditure).

Gigerenzer and Brighton (2009) and Wu et al. (2014) stressed the importance of the predictive validity of the proposed model. By splitting the data into two subsamples, this study must test a causal model of sample 1 using data from subsample 2 (i.e., the holdout sample). A high level of consistency and coverage in the association between the causal model and the outcome condition indicates the predictive validity of the model with another sample. We used the model's capacity to predict future outcome (outbound tourism expenditure) data for 2014 as a separate sample to crosscheck the predictive validity of a model obtained using older data from 2009 to 2013. Similarly, we calculated the correlation between the predicted and the actual scores.

In order to provide theoretical support for the proposed configurational model, the key tenets of complexity theory must be supported with the fsQCA results (Woodside, 2014).

Chapter 5

RESULTS AND DISCUSSION

5.1 Symmetrical Approach

Results of symmetrical analyses confirmed heterogeneity and multicollinearity issues in modelling outbound tourism expenditure. The correlation matrix results showed relatively high correlations between the study variables (Table 8, Appendix A).

As shown in Table 2, some indicators (e.g., economy, education) that were reported as significant predictors of tourism expenditure in past studies (e.g., Akkemik, 2012; Eugenio-Martin & Campos-Soria, 2014; Han et al., 2006; Wang, 2014) did not have a significant effect on tourism expenditure. Similar to these findings, Brida and Scuderi (2013) reported that education repressors rarely turn out to be significant in the group of heavy spenders. Hung et al. (2012) found that educated people have a tendency to participate in recreational activities by taking advantage of saving opportunities. Marrocu et al. (2015) reported no significant relationship between gender and education on holiday expenditure.

Table 2: Results of regression and VIF analyses.

Predictor	Criterion : outbound tourism expenditure		Collinearity statistics	
	β	τ	tolerance	VIF
Economy	0.13	1.04	0.261	3.83
Entrepreneurship & opportunity	0.77**	3.94	0.074	13.45
Governance	-0.66**	-3.56	0.191	5.24
Education	0.16	1.19	0.119	8.42
Health	0.77**	6.69	0.075	13.28
Safety& security	-0.84**	-5.71	0.180	5.56
Personal freedom	0.37*	2.45	0.409	2.44
Social capital	-0.15	-0.83	0.412	2.43

Note: β is standardized regression coefficient; VIF stands for variance inflation factor.

* p <0.05.

** p <0.001.

Eugenio-Martin and Campos-Soria (2014, p. 20) identified that safety and security were key determinants of destination choice, and also noted that “tourist expenditure per day is not marked by significant differences according to the level of education”. In contrast, Bernini and Cracolici (2015) pointed out that education acts as an effective indicator of tourism expenditure, justifying the fact that educated people can spend heavily during their travels because of their higher level employment positions and their higher income. In accordance with Chang (2011), entrepreneurship and

opportunity played a significant role in predicting tourism expenditure in the present study.

As Table 2 shows, health has a significant and positive impact on outbound tourism expenditure ($\beta = 0.77$, $p < 0.001$). In this regard, Medina- Muñoz and Medina-Muñoz (2012) explored the process of outbound tourism expenditure and the health service in Gran Canaria. In terms of personal freedom, Gholipour et al. (2014) found that tourists who had low personal freedom in their countries of origin were more likely spend heavily during international travels. Interestingly, they reported that tourism expenditure was positively and significantly influenced by the personal freedom differential. This is similar to the finding of the present study, which indicated a positive association between personal freedom and tourism expenditure ($\beta = 0.37$, $p < 0.05$). With regard to the importance of non-economic factors for indication of expenditure, Wang (2014) investigated the impact of cultural issues on the link between international tourism expenditure and income level.

The reason for such heterogeneity was the features of other indicators in the model, which were not easy to explain with symmetrical analysis. In other words, the association of indicators with criterion outcomes depends on the conditions of other factors that can be solved/explored by asymmetric modelling with fsQCA. Similarly, there was evidence of a multicollinearity problem (especially for entrepreneurship and opportunity as related to health: $VIF > 10$) in predicting outbound tourism expenditure, which may have provided misleading results in past studies (O'brien, 2007). Furthermore, models for predicting low scores of outbound tourism expenditure are not simply mirror opposites of the equations for high scores of outbound tourism

expenditure. Unlike symmetrical methods, fsQCA with complexity theory considers this fact in developing and testing a model for outbound tourism expenditure. Following the recommendations of Armstrong (1970) with regard to conducting exploratory research, we dropped non-significant terms that emerged during regression analysis from the model for further investigation (Table 2). We conducted configurational modelling for the specified model with five significant antecedents (Figure 5).

5.2 Result of fsQCA

Figure 5 and Table 3 show the fsQCA results regarding the prediction of high scores of outbound tourism expenditure. Five models, with a combination of five antecedents of prosperity, indicated high scores for outbound tourism expenditure as an outcome condition. The results revealed that there were five sufficient and consistent recipes for predicting high scores of expenditure, which provided implications for policymakers in the destination countries. Coverage (0.76) and consistency (0.75) were at a satisfactory level (> 0.20 and 0.75, respectively) (Ragin, 2008).

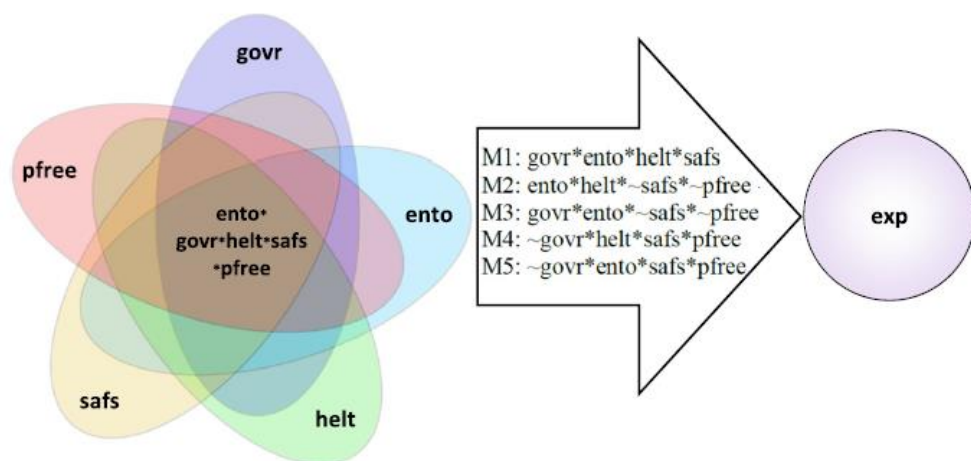


Figure 6: Results of complex configurational model for predicting high level of expenditure.

Note: exp: expenditure; ento: entrepreneurship & opportunity; govr: governance; helt: health; safs: safety & security; pfree: personal freedom. Solution coverage: 0.76; solution consistency: 0.75.

The first model in Table 3 shows that tourists who come from a country with good governance, entrepreneurship and opportunity, health, and safety and security (govr*ento*helt*safs) are good spenders. The XY plots of Models 1 and 2 for predicting high scores for outbound tourism expenditure demonstrate the asymmetric relationship of X (e.g., Models 1 or 2) and Y (e.g., expenditure). More shown in the XY plot of Model 1 (bottom left side of Table 3), cases with membership larger than 0.60 were labelled to demonstrate top spender countries whose complex conditions were the same as the recipe for Model 1.

For example, tourists who came from Norway (0.97, 0.90), Canada (0.95, 0.99), Sweden (0.97, 0.89), the Netherlands (0.92, 0.95), the United States (0.78, 1.00), Germany (0.87, 1.00), the United Kingdom (0.85, 1.00), Singapore (0.84, 0.96), and Belgium (0.84, 0.95) were top spenders because the complex causal conditions were in line with the recipe of Model 1. As previously mentioned, the association of the causal model (X) and expenditure (Y) is an asymmetric—that is, a sufficient but not necessary—relationship. This means that each causal model (X) represents sufficient (but not necessary) and consistent complex conditions for predicting high scores for expenditure (Y). Countries with membership ≥ 0.60 on XY plot of Model 2 (ento*helt*~safs*~pfree) were labelled to demonstrate that this model was a sufficient and consistent solution for predicting a high score of expenditure, but this was not necessary (see XY plot at bottom right Table 3). As Model 2 shows, tourists from countries with good health and entrepreneurship and opportunity levels, but with poor levels of safety and security and personal freedom, are among the top spenders on

outbound travelling. For example, the conditions of Saudi Arabia (0.56, 0.94), Russia (0.54, 1.00), and Israel (0.72, 0.59) are in accordance with the representation of Model 2 (Table 3). These results are in agreement with the findings of Gholipour et al. (2014), who reported that lack of personal freedom in the countries of origin led to a high level of outbound tourism expenditure.

The conditions of other top countries in outbound tourism expenditure are listed in Table 3 (M3–5). Unlike conventional research, some ingredients (antecedents) are either absent in a causal model or negatively contribute to predicting outbound tourism expenditure, which proves the importance of the complexity and heterogeneity of outbound tourism expenditure antecedents (Dolnicar et al., 2008; Wang & Davidson, 2010b). As Jang and Ham (2009) noted, the function of each indicator in simulating outbound tourism expenditure depends on the conditions (absence/presence or magnitude) of other causal antecedents. For example, personal freedom acts as a negative antecedent of outbound tourism expenditure in Models 2 and 3, but it plays a negative role in recipes of 4 and 5, and it is absent in the recipe of Model 1. Furthermore, safety and security positively contribute to predicting outbound tourism expenditure in Models 4 and 5, but it has a negative role in Models 2 and 3 (Table 3). As discussed above, Gholipour et al. (2014) identified a negative association between personal freedom and tourism expenditure, but, at the same time, they found a positive relationship between tourism expenditure and level of personal freedom, which is the difference between personal freedom of destination and personal freedom of home country. This indicates the complexity and heterogeneity of tourism expenditure.

In accordance with Ordanini, Parasuraman, and Rubera (2013), exploring the causal recipe, which is a combination of indicators, for predicting tourism expenditure is more important than the antecedents. These five models serve as a guideline for decision-makers in destination countries, whereby they can conduct target marketing in the countries with complex conditions that conform to the proposed causal models (Figure 6).

As businesses in countries of origin must create, offer, deliver, and communicate different values to heavy and light spenders, Hung et al. (2012) concluded that these two groups have different expectations of, and preferences towards, tourism products and services. Similarly, Cho (2010) assessed non-economic antecedents of tourism demands in 135 countries and found that people from different continents expressed various behaviors towards tourism demand. Akkemik (2012) found that mismanagement of international tourism resulted in leakage in the Turkish economy and offered domestic tourism as an alternative to international tourism, and Athanasopoulos et al. (2014) considered domestic tourism to be a high priority versus outbound tourism, due to its functionality as an importer of goods/services. This means that some countries might not tend to have people who spend a lot of money when travelling abroad. Hence, it is interesting to explore the recipes for negation of outbound tourism expenditure based on complex conditions in origin countries (see Figure 7 and Table 4).

According to the results, antecedent configurations (seven models) leading to low scores of expenditure (Figure 7) are not the mirror opposites of causal algorithms (five models) leading to a high score of expenditure (Figure 6). Olya and Altinay (2016) and

Wu et al. (2014) acknowledged the functionality of fsQCA in simulating the behavior of tourists towards climate risk and service facts in the spa industry, respectively. According to fsQCA results for negation of outbound tourism expenditure, tourists coming from countries with poor conditions of governance, entrepreneurship, and personal freedom (Model 1: $\sim\text{govr}*\sim\text{ento}*\sim\text{pfree}$) are light spenders (Table 4). For example, Zimbabwe (0.93, 0.96), Yemen (0.93, 0.96), Ethiopia (0.92, 0.96), Sudan (0.9, 0.82), Nigeria (0.9, 0.33), Pakistan (0.88, 0.72), Syria (0.86, 0.71), Kenya (0.86, 0.95), Honduras (0.86, 0.93), Algeria (0.85, 0.91), Tanzania (0.84, 0.89), Central African Republic (0.84, 0.97), Zambia (0.83, 0.96), Mozambique (0.83, 0.95), Egypt (0.82, 0.46), Uganda (0.82, 0.93), Lebanon (0.81, 0.39), Guatemala (0.79, 0.85), and Indonesia (0.79, 0.31) are countries whose conditions consistently and sufficiently meet the recipe of Model 1 (Consistency = 0.88, coverage = 0.43) (see XY plot at bottom right of Table 3).

As Table 4 outlined, in addition to Model 1, seven alternative causal models describe causal conditions that lead to negation of outbound tourism expenditure. For example, Model 2 ($\sim\text{govr}*\sim\text{helt}*\text{safs}$) suggests that tourists whose countries of origin are Mongolia (0.62, 0.94), Mali (0.55, 0.96), Jamaica (0.52, 0.95), Ukraine (0.52, 0.38), and Tunisia (0.51, 0.89) spend little during their outbound travels. The XY plot of Model 2 illustrates the asymmetrical relationship between this causal model and expenditure negation. Model 3 suggests that it is less likely that businesses encounter heavy spenders among tourists from countries with a high degree of personal freedom, but which are poor in terms of entrepreneurship and opportunity and health. Namibia (0.64, 0.96), Senegal (0.63, 0.96), the Dominican Republic (0.62, 0.93), Ghana (0.61, 0.9), and Paraguay (0.6, 0.95) are countries with a membership $N0.60$, in terms of

~ento*~helt*pfree (Model 3 in Table 4). As shown in Table 4, health in Models 4 and 5 positively contributes to predicting low scores of outbound tourism expenditure, while in Models 2, 3, and 6, it acts as positive antecedent of expenditure negation (Table 4). These results are in accordance with the findings of Jang and Ham (2009) which indicate that the impact of a simple antecedent on tourism expenditure must be considered along with conditions of other contributors such as health and socioeconomic factors. Businesses must regularly monitor the situation of targeted countries, in which the conditions do not match these seven causal models. This requires help for directing positioning from the current international market, as well as exploring and targeting new markets. In accordance with (Wang & Davidson, 2010b), both macro- and microanalyses of tourism expenditure have their own functionality, which offers policy and managerial implications in business organizations and/or national scales.

5.3 Predictive validity

The evidence of the predictive validity of the configurational model is presented in Table 5. By dividing the dataset into two subsamples, we tested the casual model (e.g., Model 1) obtained from subsample 1 with subsample 2. As illustrated in the fuzzy XY plot A.1 in Table 5, Model 1 (govr*ento*helt*safs) showed a satisfactory level of coverage (0.39) and consistency (0.83) (Ragin, 2008). As depicted in the XY plot A.2 in Table 5, the results of testing Model 1 using subsample 2 shows the same pattern with an acceptable magnitude for two probabilistic criteria (coverage=0.41, consistency = 0.87). Using another sample (i.e., future outcome 2014), we cross-checked the predictive validity of the causal model, and coverage (0.34) and consistency (0.88) were satisfactory (XY plot A.3 in Table 5). These results indicate the predictive validity of the proposed model. The correlation of the predicted versus

actual scores for the model obtained from symmetrical modelling are presented in Table 6. In a manner similar to the actual outbound tourism expenditure values, the predicted scores were significantly related to the predictor variables (i.e., antecedents in the asymmetric approach) at the 0.01 level. Such results show the model's capability to predict outbound tourism expenditure using another dataset.

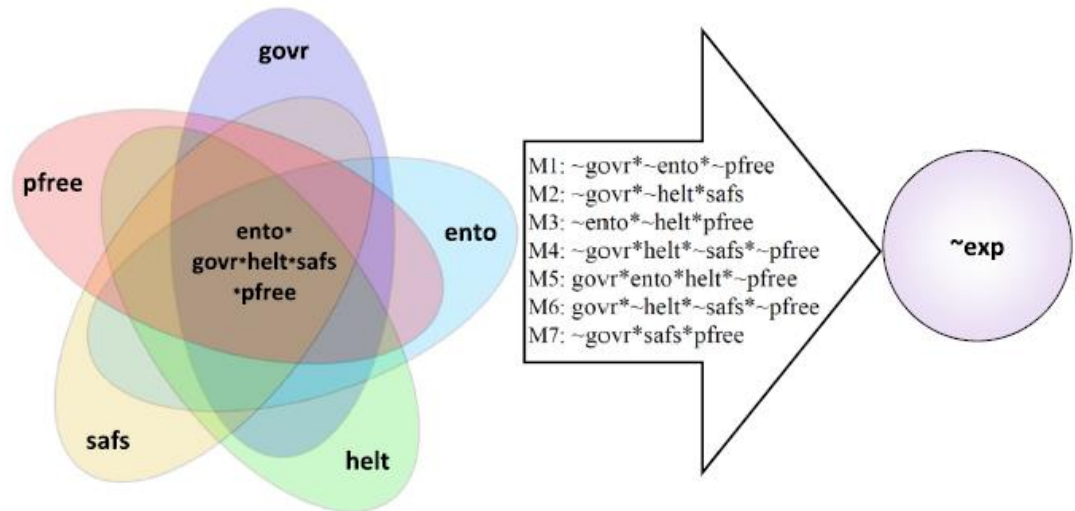
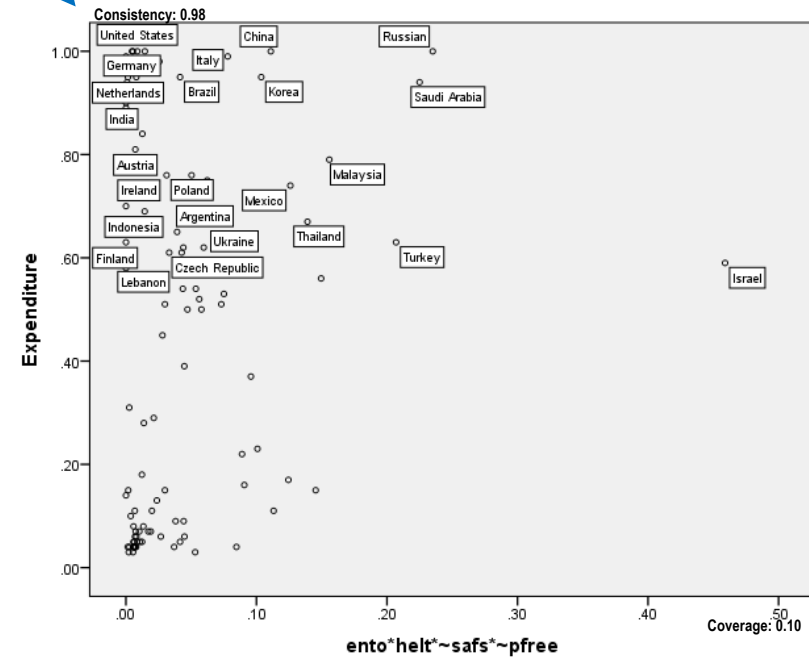
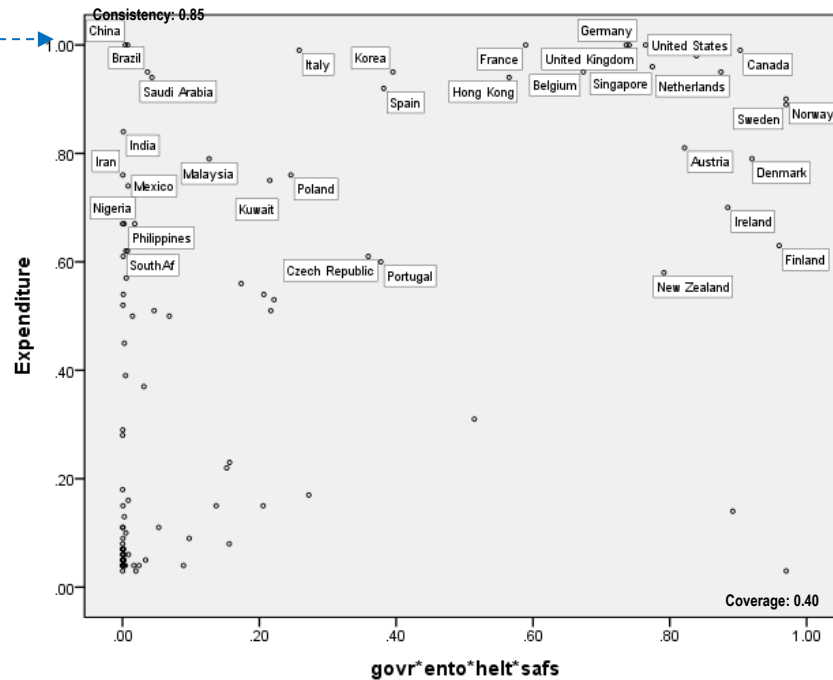


Figure 7: Results of complex configurational model for predicting low level of expenditure.

Note: exp: expenditure; ento: entrepreneurship & opportunity; govr: governance; helt: health; safs: safety & security; pfree: personal freedom. Solution coverage: 0.74; solution consistency: 0.80.

Table 3: Complex configuration of antecedents for predicting high tourism expenditure score

Models for predicting high score of outcomes	Raw coverage	Unique coverage	Consistency
<i>Model: exp = f(econ, govr, edu, ento, helt, safs, soc, pfree)</i>			
M1: govr*ento*helt*safs	0.65	0.37	0.76
M2: ento*helt*~safs*~pfree	0.32	0.03	0.77
M3: govr*ento*~safs*~pfree	0.29	0.02	0.79
M4: ~govr*helt*safs*pfree	0.24	0.00	0.76
M5: ~govr*ento*safs*pfree	0.24	0.00	0.77
<i>Solution coverage: 0.76</i>			
<i>Solution consistency: 0.75</i>			



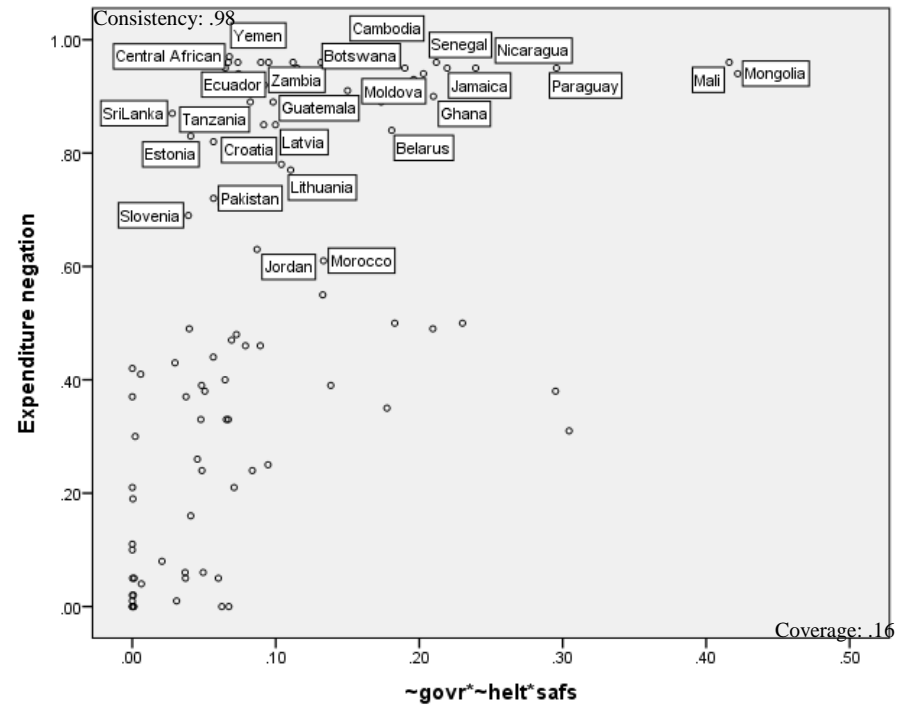
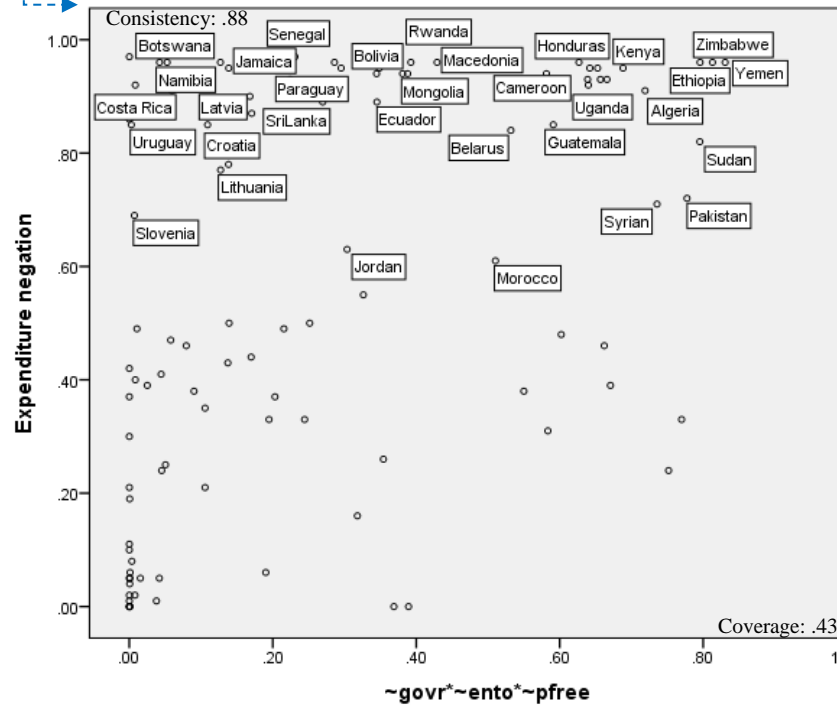
Note: exp: Expenditure; ento: Entrepreneurship & Opportunity; govr: Governance; helt: Health; safs: Safety & Security; pfree: Personal Freedom; ~ indicates negation sign.

Table 4: Complex configuration of antecedents for predicting low tourism expenditure score

Models for predicting low score of outcomes	Raw coverage	Unique coverage	Consistency
<i>Model: ~exp = f(econ, govr, edu, ento, helt, safs, soc, pfree)</i>			
M1: ~govr*~ento*~pfree	0.63	0.22	0.92
M2: ~govr*~helt*safs	0.33	0.00	0.91
M3: ~ento*~helt*pfree	0.34	0.04	0.94
M4: ~govr*helt*~safs*~pfree	0.30	0.00	0.86
M5: govr*ento*helt*~pfree	0.27	0.27	0.77
M6: govr*~helt*~safs*~pfree	0.27	0.00	0.85
M7: ~govr*safs*pfree	0.25	0.00	0.89

Solution coverage: 0.74

Solution consistency: 0.80



Note: exp: Expenditure; ento: Entrepreneurship & Opportunity; govr: Governance; helt: Health; safs: Safety & Security; pfree: Personal Freedom; ~ indicates negation sig

5.4 Evaluation of complexity theory tenets

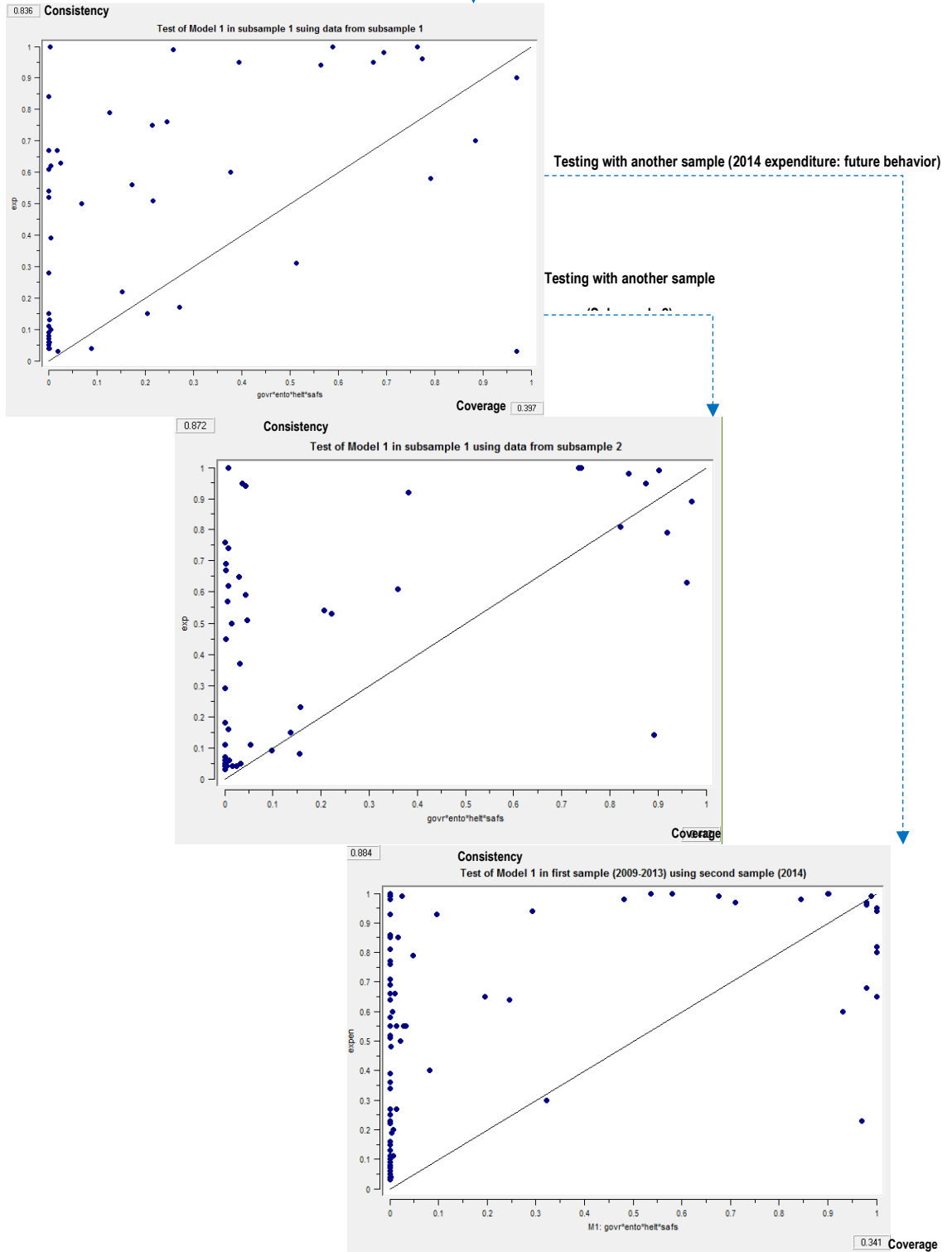
In order to examine support for the complexity theory as the theoretical underpinning of the proposed complex configurational model, this study assessed the results from fsQCA with key tenets of complexity theory (Woodside, 2014). As depicted in Figure 6, a simple antecedent (e.g., safety and security) is necessary for predicting high scores of expenditure, but it is not consistently sufficient for predicting high and low levels of outbound tourism expenditure. Therefore, Tenet 1 is supported. The fsQCA results for high and low scores of expenditure support Tenet 2 (the recipe principle) by showing that five complex configurations, with different causal antecedent conditions, sufficiently and consistently predict high scores of expenditure (Table 3) and seven recipes for predicting low scores for expenditure (Table 4).

According to the fsQCA results presented in Table 3, a unique complex antecedent configuration (e.g., Model 1) is sufficient, but not necessary, for predicting a high level of expenditure. This means that some other sufficient alternative paths (or algorithms) are capable of predicting high expenditure scores (e.g., Models 2–5 in Table 3). Such results provide evidence for supporting Tenet 3. Recall the case of Saudi Arabia and Russia in the XY plot of Model 2 in Table 3; causal configurations leading to high scores for outbound tourism expenditure (Figure 6) are not mirror opposites of causal configurations leading to negation of expenditure (Figure 7). Thus, Tenet 4, called causal asymmetry, is supported. These results are helpful for providing practical implications for managing outbound tourism expenditure for both origin and destination countries (Table 7). The actions or attributes of each simple causal antecedent depends on the presence or absence of other ingredients in a causal model. As previously mentioned, the features of health (Table 4) in formulating negation of

outbound tourism expenditure depend on the conditions of other contributors in the complex configurations. Thus, Tenet 5 is also supported, which scientifically explains the existence of heterogeneity in outbound tourism expenditure. As shown in the XY plots of Model 1 in Table 3, the causal complex conditions of some high spender countries match with the algorithms in Model 1. In other words, the coverage for Model 1 for predicting high scores of outbound tourism expenditure is 1.00 (Table 3). Thus, Tenet 6 is supported. The fsQCA results support six major tenets of complexity theory in modelling outbound tourism expenditure. In keeping with the findings of Wu et al. (2014), Olya and Altinay (2016), Olya and Gavilyan (2016), and Hsiao et al. (2015), this complex theory provides deeper insights into simulating desired outcomes in the tourism industry. In other words, complexity theory is capable of supporting the complex interactions of antecedents of social complex phenomena, such as outbound tourism expenditure.

Table 5: Results of predictive validity

Models from subsample 1	Raw coverage	Unique coverage	Consistency
Subsample 1: $exp = f(govr, ento, helt, safs, pfree)$			
M1: $govr*ento*helt*safs$	0.66	0.04	0.77
M2: $ento*helt*\sim safs*\sim pfree$	0.32	0.04	0.81
M3: $govr*ento*helt*\sim pfree$	0.36	0.00	0.81
M4: $ento*helt*safs*pfree$	0.57	0.00	0.77
Solution coverage: 0.74			
Solution consistency: 0.77			



Chapter 6

CONCLUSION

6.1 Major findings

Unlike most previous studies on outbound tourism expenditure that used symmetrical modelling/thinking, the present study developed and tested a complex configurational model using complexity theory and fsQCA. The complex interactions of socioeconomic factors increase the complexity of outbound tourism expenditure, and symmetrical approaches present misleading results as they overlook heterogeneity, contrarian cases, and multicollinearity. This study applied a pragmatic approach to predict outbound tourism expenditure by providing sufficient and consistent causal configurations of antecedents. In other words, a set of combined antecedent conditions was presented as the causal model for predicting outbound tourism expenditure as an outcome, meaning that the attribute or function of each causal antecedent varied depending on the conditions (e.g., absence/presence) of other ingredients in a model.

The present study provided evidence of predictive validity by testing the proposed model using other samples. Application of major tenets of complexity theory with the fsQCA results offered deeper perspectives into outbound tourism expenditure modelling from an asymmetrical point of view. This study also contributed to the current knowledge on outbound tourism expenditure by using five indicators of prosperity on an international scale. Organizations responsible for statistics of outbound tourism expenditure and other tourism-related variables provide data on a

country level, but not on an individual level. Modelling outbound tourism expenditure based on the conditions of the origin country enhances the utility and applicability of the current data. Recent research on tourism expenditure (e.g., Gholipour et al., 2014) has emphasized the importance of the sociocultural issues of the origin country on a national scale.

Table 6: Correlation of the predicted versus actual scores.

Variables	1	2	3	4	5	6	7
1. Entrepreneurship & opportunity	1.00						
2. Governance	0.87**	1.00					
3. Health	0.93**	0.79**	1.00				
4. Safety & security	0.85**	0.80**	0.83**	1.00			
5. Personal freedom	0.62**	0.68**	0.57**	0.70**	1.00		
6. Outbound tourism expenditure	0.62**	0.50**	0.64**	0.40**	0.26**	1.00	
7. Predicted value of Outbound tourism expenditure	0.66**	0.42**	0.62**	0.34**	0.30**	0.57**	1.00

Note: ** Correlation is significant at the 0.01 level.

Table 7: Assessment of the fsQCA results with key tenets of complexity theory

No	Tenet ^a	Supporting evidence
1	Tenet 1: A simple antecedent condition may be necessary, but a simple antecedent condition is rarely sufficient for predicting low or high Scores in the condition of an outcome.	In all causal models for predicting Outbound tourism expenditure, a simple antecedent (e.g. personal freedom) was not consistently sufficient (see Tables 3, 4, and 5).
2	Tenet 2: The recipe principle: A complex antecedent condition of two or more simple conditions is sufficient for a consistently high score in an outcome condition.	As shown in Table 4 (M1: ~govr*~ento*~pfree), three antecedents offered a sufficient and consistent condition for simulating low outcome scores. While to achieve a same outcome (i.e., expenditure negation), a combination of four antecedents used to formulate a casual recipe which appeared in M4–6 (Table 4). A configuration of four antecedents was sufficient to achieve high outbound tourism expenditure (Table 3: M1–5).
3	Tenet 3: The equifinality principle: A model that is sufficient is not necessary for an outcome having a high score to occur.	The fsQCA results showed that Model 1 (govr*ento*helt*safs) described the conditions of 18 countries whose citizens are heavy spenders during outbound travel. Alternative models (Models 2–5) represented the conditions of other top spenders' countries (Table 3). Seven models showed necessary and sufficient conditions for expenditure negation (Table 4).
4	Tenet 4: The causal asymmetry: Recipes indicating a second outcome (e.g., rejection) are unique and not the mirror opposites of recipes of a different outcome (e.g., acceptance) principle.	A comparison of the five models in Figure 6 with the seven models in Figure 7 showed that models of high expenditure were not simply the mirror opposites of models of expenditure negation.
5	Tenet 5: An individual feature (attribute or action) in a recipe can contribute positively or negatively to a specific outcome depending on the presence or absence of the other ingredients in the recipes.	Personal freedom and safety and security were two examples of heterogeneity the roles of which in the causal recipes were defined by features of other indicators in the given recipe. A comparison of Models 2–3 and Models 4–5 in Table 3 showed that personal freedom and safety and security act

6	<p>Tenet 6: For high Y scores, a given recipe is relevant for some but not all cases; coverage is >1.00 for any one recipe.</p>	<p>as both negative and positive antecedents in the models, respectively, the action of which depends on the attributes of other antecedents.</p> <p>As clearly illustrated in the XY plots in Tables 3 and 4, coverage for the causal models was >1.00.</p>
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^aSource of tenets (Woodside, 2014, 2497–2500).

6.2 Implications

The findings are useful for public and private tourism sectors when developing marketing strategy in countries with high levels of outbound tourism expenditure. This study also added to the outbound tourism expenditure literature by presenting causal recipes (i.e., complex configurations of antecedents) for predicting low scores of outbound tourism expenditure. Countries that are interested in outbound tourism expenditure reduction can benefit from these models. Decision-makers in destination countries can also use recipes for a low score of tourism expenditure. Complexity theory suggests that the causal model for predicting high score outbound tourism expenditure is not the mirror opposite of recipes for predicting a low score of outbound tourism expenditure.

The fsQCA enables us to model low scores of outbound tourism expenditure by regulating the socioeconomic conditions of the country. However, this study calculated the causal recipes for managing outbound tourism expenditure, but the solutions for outbound tourism expenditure negation are associated with prohibitive social, economic, and even political costs (see Figure 7). For example, it is not logical to disregard the health improvement of a country for the sake of outbound tourism expenditure reduction. Selection of convenient causal antecedents (e.g., cultural

issues) of outbound tourism expenditure in future studies might address this issue. In other word, as far as implication of this study is leading guidance for strategist at macro level, they should consider macro policy of reference country in accordance with the share import in outbound tourism expenditure. For instance, the country with considerable depressed aged population in specific time might outweigh the cost of outbound travels for its residence and compensate this amount by other good or service exports. Nevertheless, businesses can benefit models of expenditure negation. Specifically, micro service sectors like airlines, hotels and tour operators with limited advertising budget can benefit from the outcome of high and low spenders. The present study benefited from the strength of both the symmetrical approach for model specification and the asymmetrical approach for model testing, and it concluded that causal models for predicting tourism expenditure are as important as their antecedents. Surprisingly, the significance of non-economic factors was observed during model specification. In other words, social and cultural factors are very important in indicating tourism expenditure.

6.3 Current and future issues in tourism expenditure studies

There are emerging concepts as current world issues, which reflected enormous effect on tourist's expenditure behavior. For instance, there are significant number of studies acknowledged the impact of world economic crisis on expenditure behavior of household in different countries (e.g. European, American, Asian) at international and national levels for tourism products (Alegre & Pou, 2016; Almeida & Garrod, 2016; Bernini & Cracolici, 2015; Dragouni et al., 2016; Eugenio-Martin & Campos-Soria, 2011, 2014; Kim et al., 2012). Nowadays, world is struggling with various socio-political and socio-cultural issues after economic crises which have been shown drastic influence on tourism industry in different parts of the world. Here this research

identified some examples that may guide scholars to integrate current issues in modelling expenditure in future studies.

Christmas markets in Europe as one of the important tourist destination attracts millions of visitors each year and get attention of scholars from different subsectors of tourism industry (Brida et al., 2013; Brida & Tokarchuk, 2017). After dreadful terroristic attack in Berlin's charismas market, not only Europe but also other countries stepped up safety and security measures in those markets. Consequently, safety and security may bring tourist extra cost which they may have to take in to consideration for their safer transportation and accommodation, which were not serious issue on decision making before.

Aging population is another important controversial world issue these days. As an example, Riker (2014) stressed on the significance of aging population of US residents on outbound travel expenditure. Accordingly, tourism industry may confront with new trend of aging tourist who seeks their desire such as health care in tourism destination specially, if they are not provided with the satisfactory level of expected demands in their origin country, they may travel to fulfill their needs.

Another viral topic in the world is increment in numbers of refugees in develop countries which seems safer or politically freer than refugee's origin country. Discrimination against refugees in some cases may affect expenditure behavior of refugees or tourists from countries with significant number of refugees, when they travel abroad. These kind of discriminations may be predominant impetus for some tourists to spend more on tourism products such as transportation during travel or accommodation in order to avoid some public judgment specifically when they travel in a group. This can be another interesting topic for cross-cultural studies in this regard.

On the other hand, radical change in government policy may increase number of short and longtime tourists or migrants of that country. These policies may include visa bans to or from some countries, personal or social freedom, or even in great scale result of president alteration in country election. Subsequently, education tourism can be result of some of those social leakages in residence region that because of high in amount can directly affect total outbound expenditure in country of origin or total inbound expenditure in country of destination. As another example, we can point out political and security limitation in technology accessibility that may forces people to spend extra charge to access their device or Wi-Fi internet. For example, the US new ban for carrying laptop in their flights may force tourist to spend more time and more money to use other flights with more connections. In all those topics, psychological pattern can play a substantial role in tourist decision making of expenditure.

Therefore, future studies should address the issue of heterogeneity by exploring a wider spectrum of antecedents in a group of social, political, and cultural issues, such as safety and security, health care, wellbeing, personal freedom, governance, and government policy for refugees in tourist's country of origin. Specifically, the concern of safety and security or health is the most important issue in expenditure, because of the essence of human life. Unambiguously, in critical situations, when people life is concerned or family life would be on danger, one might not think about the economic efficiency of the price or expenditure amount. For instance, to avoid feeling of unsafe or further to avoid the risk of life as part of travel experience, tourists may pay extra money for safer transportations and accommodations or seek for health care service during travel, which may contribute to higher expenditure in country level or international expenditure.

As a mixed complex pattern of variables in both residence and destination, we can point out the refugee's pattern of expenditure in different tourist destinations. These studies require a multidisciplinary approach, assisted by not only conventional liner research methods and quantitative approaches but also interviews, focus group discussions, and field observations. Such studies would provide valuable insights for psycho-cultural information of tourist and destination development and benefit both service providers in inbound and outbound tourism industries

6.4 Development and Connections of Key gaps in literature

Using Leximancer 4.5, this study performed semantic network analyses to triangulate the authors' identification of research gaps in recent research studies, which had been reviewed in this thesis and seek further insights to cover them. The analyses led to a visual network of research recommendation of gaps, deficit and needs of future research of expenditure modelling from antecedents, theory, and methodology development. Figure 8 provides an overall conceptual mapping of how recommendations of future research in each area can be related and nine themes are represented by the 39 articles on the map, each reflecting a group of conceptually related nodes. In accordance with this regard, more than 20,000 concepts, automatically found by software and found by user defined, the scatterings of concepts under specific notions lead us to find the most suitable themes regarding of recommendation for expenditure modelling. In order to avoid the crowdedness of concepts on each themes we allowed 30 of most repeated concepts in the total map. As it is shown in the map, nodes and concepts are very close to each other, which is another clue for complexity of concepts in tourism expenditure modelling and recommended the combination of socio-political, socio-psychographic, socio-cultural and psychographic pattern in origin country. Researches in the period time of 2010–

2017 focused on social, socio-economic, methodology, psychographic, origin country, political, trip-related, cultural, and theory attributes. The general gap topics related to expenditure behavior of tourists in recent years demonstrate a paramount shift to social antecedent's role on economic expenditure of tourists in destinations base of their origins.

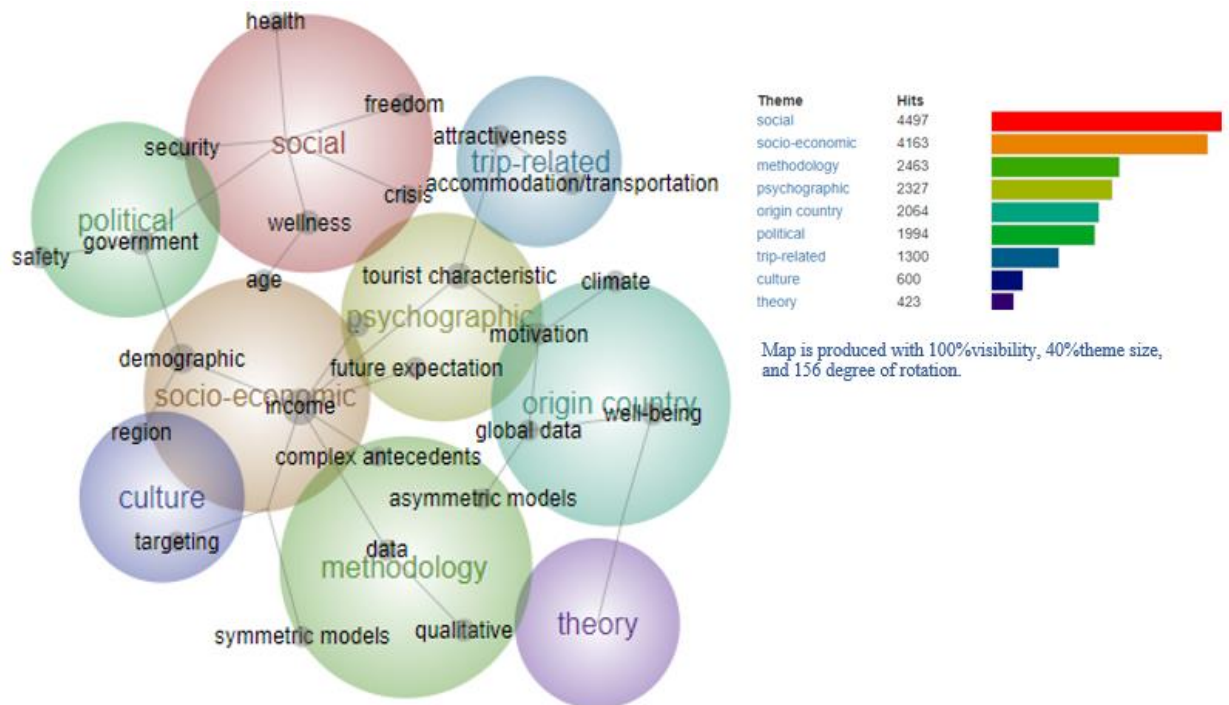


Figure 8: Thematic map of emerging current and future gap concepts in expenditure modelling in the period 2010-2017

Note: Social: freedom, health, wellness, crisis; Socio-economic: income, age, demographic, social class; Methodology: data, asymmetric model, qualitative, complex antecedents, symmetric model; Psychographic: tourist characteristics, motivation, future expectation; Origin country: global data, climate, well-being; Political: government, safety, security; Trip-related: attractiveness, accommodation/transportation; Culture: region, targeting; Theory

6.5 Limitations and future research directions

The present study focused on outbound tourism expenditure by using available data for 105 countries over five years (2009–2013). Future studies can reuse the analytical approaches of this study with more updated data for all countries and other versions of tourism expenditure, such as domestic tourism expenditure, inbound tourism expenditure and international tourism expenditure. In addition, further research can develop configurational models with complex outcome conditions (e.g., outbound tourism expenditure and tourism receipts) and other causal antecedents of tourism expenditure, such as sociodemographic, psychological, and trip-related features that can be used for target marketing at the individual level.

Inclusion of other antecedents of tourism expenditure, such as exchange rate and climate, is a pathway for further research into the complex phenomenon of tourism expenditure. This is a limitation of the present study, which resulted from being unable to access a worldwide dataset of these indicators. This study suggests, application of complexity theory with fsQCA, as a pragmatic approach, for developing and testing theories that provide a richer understanding of tourism, especially in socioeconomic, political and environmental aspects of tourism studies as complex phenomena, that accounted as current issues in tourism.

Based on literature review and schematic map of future research recommendations, many scholars recommend new social theoretical foundations, new methodological approaches, and new socio-cultural and socio-political variables, besides, measuring expenditure model in diverse regions to address the complex interaction among antecedents and dependent variables. Such proposing approach require inclusion of

both psychological and cultural understanding of human beings, not merely as customers, but also the impact of today world crisis have to included. For the reason that, values, needs and expectations of tourists are formed under different specific circumstances beyond individual pattern of spending at macro level. Subsequently, marketing policy and managerial planning need to be organized by service providers in the national, regional or local level to make a significant contribution to tackle complex interaction between attributes of spending behavior and social cultural contexts at macro context (Jin & Wang, 2016).

Furthermore, researchers should make greater attention to some geographical regions that remained unexplored. Europe, despite being researched (most) in 14 studies (35%), included many touristic regions and countries which are listed in top attractive tourist destinations in the world (35 countries out 50 top tourist arrival countries) and need to be focused more not only in specific repeated area . Accordingly, it can be conducted for Australia and America. On the other hand, the expenditure behavior of Middle East residents and African had received minimum attention at both country and global level of research data. Specifically, when it comes to consider the migration pattern or long stay tourists such as educational tourism can be significant source of their expenditure behavior.

Finally, Tourism economics need to be focused in broader range of disciplines in outbound expenditure and reflect broader perspective on world socio-political crisis as well as address global tourism challenges such as environmental issues (e.g., global warming), aging population, changing consumer demographics, application of technology (Jin & Wang, 2016; Olya & Alipour, 2015; Von Bergner & Lohmann, 2014).

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APPENDICES

Appendix A: Correlation matrix

Table 8: Correlation matrix of all study variables

variable	1	2	3	4	5	6	7	8	9
economy	1								
Entrepreneurship and opportunity	0.684**	1							
Governance	0.735**	0.871**	1						
Education	0.512**	0.670**	0.726**	1					
Health	0.715**	0.686**	0.724**	0.573**	1				
Safety and security	0.645**	0.832**	0.721**	0.667**	0.646**	1			
Personal freedom	0.615**	0.721**	0.783**	0.795**	0.588**	0.742**	1		
Social capital	0.699**	0.827**	0.830**	0.815**	0.669**	0.741**	0.827**	1	
Tourism expenditure	0.382**	0.362**	0.336**	0.316**	0.576**	0.194*	0.320**	0.357**	1

* Correlation is significant at the 0.05 level.

**Correlation is significant at the 0.01 level

Appendix B: Country list of expenditure value and prosperity indicators' score in 2013

Table 9: Countries' expenditure values and prosperity scores in 2013

NO	country	Expend (million current US\$)	Economy	Entrepreneurship & Opportunity	Governance	Education	Health	Safety & Security	Personal Freedom	Social Capital
1	Algeria	487.60	3.70	2.77	2.54	3.40	3.32	2.64	2.25	2.75
2	Argentina	5,277.60	4.26	4.49	2.90	5.49	6.02	5.00	7.30	4.44
3	Australia	24,993.20	17.42	16.80	19.56	41.56	12.46	12.24	27.79	26.43

4	Austria	10,346.20	13.42	11.23	13.88	10.65	19.61	12.65	9.38	12.87
5	Bangladesh	305.00	2.86	2.47	2.67	2.57	2.63	2.45	5.02	2.20
6	Belarus	758.20	2.51	3.59	2.26	9.52	5.98	4.47	2.85	9.45
7	Belgium	19,903.60	9.53	9.24	11.81	11.45	17.81	10.06	11.51	11.21
8	Belize	37.60	3.24	3.69	3.30	2.81	4.00	3.81	4.45	4.61
9	Bolivia	324.20	3.61	2.59	2.56	3.32	2.60	2.81	4.44	2.67
10	Botswana	73.40	2.42	3.50	7.73	2.80	2.51	3.95	7.41	2.96

11	Brazil	19,183.60	6.05	4.75	4.14	3.19	4.22	3.24	8.73	3.80
12	Bulgaria	1,430.40	2.47	4.94	3.66	4.60	4.84	5.64	4.51	3.04
13	Cambodia	247.20	2.63	2.41	3.25	2.53	2.43	3.33	2.40	2.35
14	Cameroon	446.80	2.54	2.21	2.21	2.42	2.27	2.52	3.56	2.40
15	Canada	31,472.20	24.12	13.85	21.82	22.24	14.53	17.04	38.70	19.31
16	Central African Republic	50.25	1.92	2.15	2.21	2.19	2.17	2.25	3.12	2.19

17	Chile	1,583.00	6.02	6.23	9.67	4.08	4.98	6.07	7.98	3.63
18	China	80,344.00	10.39	3.72	3.68	4.26	3.53	2.74	2.41	8.42
19	Colombia	3,098.40	3.90	3.96	4.03	3.32	3.33	2.20	4.54	4.02
20	Costa Rica	415.00	5.12	5.41	7.61	3.99	5.13	4.95	11.45	4.79
21	Croatia	911.40	3.48	5.16	4.72	4.82	6.51	6.52	3.55	2.84
22	Czech Republic	4,320.60	6.38	7.78	7.05	8.10	8.58	8.69	5.74	5.86

23	Denmark	9,524.20	13.16	36.94	29.40	16.07	12.55	20.06	20.72	30.26
24	Dominican Republic	385.40	2.52	3.36	3.04	2.90	2.79	2.78	5.79	3.55
25	Ecuador	588.60	3.48	3.09	2.43	3.54	3.02	2.72	4.65	2.41
26	Egypt, Arab Rep.	2,522.60	2.38	2.92	2.87	3.03	3.31	2.76	2.16	2.65
27	Estonia	766.60	3.80	7.91	9.22	6.36	5.76	6.22	3.43	5.76
28	Ethiopia	158.00	1.94	2.14	2.32	2.22	2.22	2.24	2.50	2.62

29	Finland	4,750.60	11.76	28.96	21.35	26.51	14.78	28.33	11.93	21.31
30	France	40,948.00	9.54	9.99	10.77	11.56	21.28	7.49	11.92	5.76
31	Germany	83,466.60	15.64	11.30	11.86	9.89	27.25	9.90	13.90	12.71
32	Ghana	532.40	1.94	2.61	4.21	2.46	2.62	4.16	5.73	2.68
33	Greece	2,838.80	3.50	5.20	4.75	7.44	9.14	6.00	2.52	2.59
34	Guatemala	727.20	3.27	3.09	2.78	2.58	2.80	2.64	3.01	3.69
35	Honduras	350.40	2.24	2.68	2.60	2.81	3.05	3.38	3.00	2.73

36	Hong Kong SAR, China	18,643.60	15.83	12.57	10.30	5.14	6.88	17.00	9.75	9.15
37	Hungary	2,302.60	3.25	5.04	6.45	7.91	6.64	7.61	4.07	3.39
38	Iceland	700.60	4.11	19.58	11.29	17.33	21.33	36.85	19.65	14.03
39	India	11,482.40	3.95	2.54	5.02	2.63	2.46	2.52	3.15	2.18
40	Indonesia	6,482.40	4.44	2.90	3.17	3.23	2.74	3.92	2.76	5.98

41	Iran, Islamic Rep.	8,447.00	2.65	2.70	2.22	3.96	3.73	2.32	2.27	2.26
42	Ireland	6,724.60	7.37	14.84	12.91	14.35	14.75	26.86	20.59	16.87
43	Israel	3,707.80	7.06	7.71	8.08	7.46	7.38	2.45	2.51	10.58
44	Italy	27,356.60	5.69	6.61	6.13	7.69	10.47	5.92	5.91	5.91
45	Jamaica	180.80	2.19	4.43	3.62	2.98	3.56	4.20	5.10	4.68
46	Japan	26,035.60	14.92	9.40	10.17	9.05	26.41	12.08	5.17	8.93

47	Jordan	1,204.60	2.32	3.50	4.54	4.53	4.00	3.65	2.24	2.87
48	Kazakhstan	1,486.00	3.89	3.79	2.77	5.16	4.10	4.50	4.47	7.66
49	Kenya	202.50	1.90	2.63	2.38	2.37	2.35	2.25	3.00	3.08
50	Korea, Rep.	19,208.40	8.82	10.46	7.44	22.39	8.77	7.11	4.16	4.11
51	Kuwait	8,298.00	8.90	6.94	5.89	4.23	6.09	7.03	4.35	4.87
52	Latvia	721.40	2.66	6.54	5.36	7.02	5.05	5.06	2.87	2.69

53	Lebanon	4,213.00	2.84	2.98	2.50	4.16	3.03	3.04	2.65	2.30
54	Lithuania	932.00	2.58	5.66	5.30	7.53	5.44	6.41	3.01	4.27
55	Macedonia, FYR	109.40	2.10	3.59	3.36	3.44	4.74	4.02	2.90	2.51
56	Malaysia	9,701.40	11.13	5.70	6.57	5.19	4.87	4.27	2.53	2.85
57	Mali	110.67	2.32	2.16	2.89	2.18	2.27	4.57	5.45	4.53
58	Mexico	7,973.00	6.28	3.59	3.55	3.24	4.43	2.68	3.36	4.56
59	Moldova	280.60	2.02	3.38	2.66	3.83	3.06	3.40	2.49	2.99

60	Mongolia	315.00	2.32	3.93	3.01	4.41	2.72	5.45	3.07	6.50
61	Morocco	1,248.60	5.30	3.19	3.43	2.46	3.18	3.23	2.50	6.93
62	Mozambique	213.80	2.25	2.34	2.88	2.24	2.17	2.75	3.20	2.36
63	Namibia	151.00	2.51	2.80	5.12	2.62	2.51	3.43	6.08	2.82
64	Nepal	397.60	2.33	2.33	2.52	2.46	2.67	2.69	3.43	2.70
65	Netherlands	20,279.60	16.22	15.95	16.03	14.79	19.20	11.28	15.98	22.96

66	New Zealand	3,329.20	8.90	13.08	30.33	44.66	10.13	15.76	29.46	27.94
67	Nicaragua	232.40	2.38	2.46	2.71	2.86	2.86	3.53	5.10	2.75
68	Nigeria	5,841.50	2.12	2.31	2.17	2.23	2.28	2.23	2.71	3.26
69	Norway	15,256.80	39.82	22.48	14.23	28.77	30.63	29.49	28.60	33.65
70	Pakistan	1,044.20	2.20	2.60	2.31	2.26	2.45	2.16	2.22	2.22
71	Panama	475.00	4.81	5.93	4.14	4.23	4.02	5.26	6.37	5.30
72	Paraguay	180.00	4.04	2.91	2.56	2.66	3.16	3.87	5.62	4.39

73	Peru	1,350.40	4.21	3.42	3.20	3.24	2.87	3.05	4.08	2.50
74	Philippines	5,831.00	4.54	3.23	4.05	3.64	2.74	2.54	4.51	3.39
75	Poland	8,454.60	4.53	5.92	6.17	6.86	6.95	8.57	5.87	7.36
76	Portugal	3,950.00	4.31	7.62	7.19	7.87	7.75	11.43	10.11	4.05
77	Romania	1,780.80	2.65	4.58	3.51	4.86	4.05	5.13	3.85	2.40
78	Russian	35,373.00	3.41	4.52	2.35	6.88	5.03	2.85	2.54	4.05
79	Rwanda	83.60	2.07	2.41	4.24	2.42	2.38	3.49	2.79	2.19

80	Saudi Arabia	18,701.60	7.01	4.73	4.60	3.89	4.92	3.23	2.33	8.59
81	Senegal	155.67	2.11	2.28	2.93	2.30	2.43	3.38	5.95	2.81
82	Singapore	20,822.00	31.87	15.14	13.59	5.55	9.82	18.20	5.60	5.81
83	Slovak	2,146.60	3.79	6.53	5.65	7.91	7.59	6.59	4.47	5.20
84	Slovenia	1,100.80	5.26	8.67	8.05	15.07	9.09	15.66	8.75	6.38
85	SouthAf	4,505.40	2.56	5.63	5.15	2.90	2.50	2.69	4.11	3.39
86	Spain	16,482.00	5.84	7.80	9.06	18.76	9.41	6.95	10.88	7.33

87	SriLanka	652.60	2.63	2.97	4.98	4.22	3.23	2.32	4.50	7.09
88	Sudan	816.00	2.32	2.40	2.13	2.22	2.46	2.16	2.28	6.05
89	Sweden	14,599.80	22.27	34.24	24.69	15.40	15.72	23.61	22.60	17.30
90	Switzerlan d	70.00	37.94	18.70	35.11	7.28	37.49	15.67	10.80	16.64
91	Syrian	1,055.33	2.72	2.35	2.86	2.98	3.21	2.41	2.30	2.85
92	Tanzania	567.40	2.17	2.22	2.93	2.35	2.30	2.50	2.92	4.12
93	Thailand	5,728.20	9.71	4.04	4.09	3.94	3.57	3.02	2.29	11.60

94	Trinidad and Tobago	108.67	3.12	5.26	4.45	3.23	4.00	4.70	7.14	3.24
95	Tunisia	567.40	3.38	4.58	3.76	4.03	3.96	4.49	2.39	2.63
96	Turkey	4,712.60	2.83	4.29	4.77	2.90	4.16	2.87	2.37	2.23
97	Uganda	370.80	2.16	2.37	2.73	2.35	2.24	2.23	3.23	3.96
98	Ukraine	4,480.00	2.21	3.59	2.32	6.06	3.63	4.24	2.65	4.58
99	United Kingdom	51,093.40	8.07	22.99	18.15	8.30	10.96	9.34	14.10	15.11

100	United States	92,547.80	10.28	18.69	18.44	20.39	43.34	7.85	14.18	16.31
101	Uruguay	717.80	4.06	4.24	8.24	5.30	5.63	8.33	15.32	4.72
102	Venezuela, RB	1,953.50	3.39	3.09	2.23	4.46	3.48	2.56	3.16	3.69
103	Yemen, Rep.	147.60	1.96	2.19	2.20	2.24	2.43	2.36	2.16	2.48
104	Zambia	169.40	2.01	2.32	2.99	2.41	2.20	2.57	3.15	3.90
105	Zimbabwe	73.20	1.97	2.17	2.14	2.43	2.25	2.19	2.42	3.06

Appendix C: Country ranking by prosperity index between 2007-2016

Table 10: Countries' prosperity ranks between years 2007-2016

Countries prosperity ranks between year 2007-2016

country	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Afghanistan	148	147	147	147	149	149	147	149	148	148
Angola	135	132	134	136	139	141	141	141	141	141
Albania	83	74	70	73	71	74	80	73	74	74
United Arab Emirates	43	42	42	41	42	42	41	40	41	41

Argentina	59	61	53	47	45	46	46	50	49	49
Armenia	87	87	98	99	104	95	95	95	99	99
Australia	2	1	2	3	4	8	7	9	6	6
Austria	15	13	15	13	15	13	13	16	15	15
Azerbaijan	111	106	103	111	109	106	102	106	103	103
Burundi	140	137	132	134	136	134	134	137	140	140
Belgium	17	17	17	16	16	16	15	15	16	16

Benin	120	121	119	122	124	117	118	117	127	128
Burkina Faso	121	117	115	115	113	108	112	112	113	112
Bangladesh	115	116	113	113	107	111	110	115	114	114
Bulgaria	60	58	56	54	54	52	56	55	56	57
Bahrain	52	48	52	56	68	72	57	66	66	67
Belarus	97	99	96	89	95	91	90	98	98	98
Belize	63	63	66	67	70	75	75	79	80	81

Bolivia	91	92	94	95	91	83	86	80	79	79
Brazil	49	46	48	48	46	47	48	53	51	52
Botswana	47	49	47	50	52	50	53	57	53	54
Central African Republic	143	143	145	146	144	144	149	147	147	147
Canada	4	4	6	5	5	6	5	5	5	5
Switzerland	9	9	8	9	9	3	3	3	4	4

Chile	35	37	33	30	33	30	33	29	31	31
China	89	85	88	85	86	86	89	88	90	90
Ivory Coast	133	133	133	138	140	133	124	125	123	123
Cameroon	129	131	129	124	122	121	122	123	125	127
Democratic Republic of Congo	147	148	148	148	148	148	148	148	145	145
Congo	134	135	135	135	130	130	132	134	131	130

Colombia	67	69	72	72	69	68	72	70	72	72
Comoros	137	136	136	133	134	132	133	130	130	131
Costa Rica	29	32	31	35	36	33	31	31	29	29
Cyprus	26	24	25	24	24	27	28	34	32	33
Czech Republic	28	26	24	26	26	28	30	27	27	27
Germany	14	14	13	12	12	11	11	11	11	11
Djibouti	101	102	97	102	112	113	113	111	112	113

Denmark	6	6	9	7	7	9	9	8	9	9
Dominican Republic	55	59	60	61	58	57	58	58	63	63
Algeria	103	109	109	109	114	114	111	110	111	111
Ecuador	76	84	81	83	75	71	66	59	59	59
Egypt	118	114	112	117	121	122	130	126	117	117
Spain	20	20	21	20	21	20	21	20	21	21
Estonia	30	29	32	34	29	32	27	26	26	26

Ethiopia	131	128	130	130	133	131	131	132	132	132
Finland	5	8	7	8	6	7	8	4	3	3
France	19	18	19	18	17	19	18	18	18	18
Gabon	125	122	125	125	117	126	121	124	121	120
United Kingdom	11	12	10	10	10	10	10	10	10	10
Georgia	99	93	92	82	80	79	73	77	85	84
Ghana	69	75	83	74	79	81	82	89	87	87

Guinea	132	134	137	137	137	139	138	138	138	138
Greece	37	35	40	42	48	54	54	48	44	44
Guatemala	84	76	78	79	81	77	77	82	86	86
Guyana	72	77	75	76	74	76	78	81	83	80
Hong Kong	21	21	20	21	20	22	23	23	23	23
Honduras	73	73	85	91	83	87	96	90	93	92
Croatia	46	45	44	43	47	49	47	44	43	43

Hungary	39	41	41	40	41	43	43	45	47	47
Indonesia	80	78	65	66	55	67	68	63	61	61
India	104	108	106	114	110	115	109	108	105	104
Ireland	10	11	14	15	11	15	14	14	13	13
Iran	116	118	120	120	116	116	119	118	118	118
Iraq	146	146	144	144	146	147	143	143	143	143
Iceland	12	10	11	11	13	12	12	13	14	14

Israel	38	38	39	38	39	39	37	41	40	40
Italy	24	28	27	27	30	29	32	33	34	32
Jamaica	58	56	59	57	62	62	65	54	55	55
Jordan	75	82	74	80	84	94	88	92	89	89
Japan	22	22	22	23	22	23	22	22	22	22
Kazakhstan	92	90	90	92	90	85	91	87	82	82
Kenya	96	112	114	107	105	109	99	100	97	97

Kyrgyzstan	94	88	91	96	93	93	92	85	77	77
Cambodia	114	100	93	94	89	92	98	97	91	91
South Korea	34	34	35	33	32	34	34	38	35	35
Kuwait	53	54	55	62	56	56	76	76	71	71
Laos	105	98	99	98	97	105	101	103	102	102
Lebanon	86	91	84	88	92	98	100	105	104	105
Liberia	128	127	123	121	118	120	125	133	133	133

Libya	124	123	124	126	131	127	127	135	136	136
Sri Lanka	88	79	73	69	67	59	63	68	54	56
Lesotho	119	115	116	118	120	118	116	114	115	115
Lithuania	51	50	54	53	50	45	45	46	42	42
Luxembourg	13	15	12	14	14	14	17	12	12	12
Latvia	42	43	46	46	44	44	38	36	37	37
Morocco	102	104	101	101	101	100	107	104	101	101

Moldova	100	101	105	97	96	97	94	94	95	96
Madagascar	123	124	128	131	132	135	129	128	129	124
Mexico	56	57	64	59	66	58	62	60	65	65
Macedonia	71	64	62	65	64	70	49	47	52	53
Mali	130	130	127	123	125	138	135	131	134	134
Malta	27	27	28	28	27	26	25	24	24	24
Montenegro	65	62	61	55	60	66	55	56	58	58

Mongolia	82	86	86	81	78	80	74	74	76	76
Mozambique	117	119	121	119	123	123	123	119	122	122
Mauritania	138	142	140	139	141	142	142	142	142	142
Mauritius	31	30	30	29	31	31	29	30	30	30
Malawi	93	94	87	90	106	101	104	109	110	110
Malaysia	36	36	37	39	37	36	35	37	38	38
Namibia	62	65	63	60	59	63	67	71	69	68

Niger	141	139	139	140	135	136	139	139	137	137
Nigeria	122	125	131	129	129	129	136	136	135	135
Nicaragua	64	68	76	78	77	69	61	64	68	69
Netherlands	3	3	3	2	2	4	4	6	7	7
Norway	7	7	5	6	8	5	2	2	2	2
Nepal	109	96	108	106	111	102	93	91	94	94
New Zealand	1	2	1	4	3	2	1	1	1	1

Oman	61	60	58	58	57	61	64	65	70	70
Pakistan	142	140	142	141	142	140	140	140	139	139
Panama	41	40	38	37	38	38	40	39	39	39
Peru	68	67	67	63	63	65	70	69	64	64
Philippines	77	72	77	77	72	64	60	62	60	60
Poland	40	39	36	32	35	35	36	32	33	34
Portugal	25	25	26	25	25	24	24	25	25	25

Paraguay	81	80	71	68	61	55	69	75	73	73
Qatar	44	44	43	44	43	41	42	43	46	46
Romania	57	55	57	64	65	60	59	51	50	50
Russia	106	103	107	104	108	107	105	96	96	95
Rwanda	107	105	95	93	94	88	85	84	88	88
Saudi Arabia	90	89	89	87	88	84	84	86	84	85
Serbia	70	70	68	70	73	73	71	67	67	66

Sudan	139	138	141	142	143	143	144	145	146	146
Senegal	108	113	118	112	119	112	108	99	106	106
Singapore	18	19	18	19	19	18	19	19	19	19
Sierra Leone	126	129	122	128	127	124	128	121	124	125
El Salvador	79	81	79	84	85	82	83	83	81	83
Suriname	54	51	50	51	53	51	51	52	57	51
Slovakia	33	33	34	36	34	37	39	35	36	36

Slovenia	23	23	23	22	23	21	20	21	20	20
Sweden	8	5	4	1	1	1	6	7	8	8
Swaziland	127	126	126	127	128	128	126	127	128	129
Chad	149	149	149	149	145	145	146	144	144	144
Togo	144	144	143	143	138	137	137	129	126	126
Thailand	50	52	49	49	49	48	52	61	62	62
Tajikistan	110	111	110	108	100	103	106	102	100	100

Trinidad and Tobago	45	47	45	45	40	40	44	42	45	45
Tunisia	66	66	69	71	82	90	87	93	92	93
Turkey	74	83	82	75	76	78	79	72	78	78
Tanzania	98	110	102	105	98	110	115	113	109	109
Uganda	113	120	117	116	115	119	117	122	116	116
Ukraine	95	95	104	103	99	96	97	101	107	107
Uruguay	32	31	29	31	28	25	26	28	28	28

United States	16	16	16	17	18	17	16	17	17	17
Venezuela	85	97	100	100	102	99	114	116	120	121
Vietnam	78	71	80	86	87	89	81	78	75	75
Yemen	145	145	146	145	147	146	145	146	149	149
South Africa	48	53	51	52	51	53	50	49	48	48
Zambia	112	107	111	110	103	104	103	107	108	108
Zimbabwe	136	141	138	132	126	125	120	120	119	119