Segmenting Markets by Bagged Clustering: Young Chinese Travelers to Western Europe

Abstract

Market segmentation is ubiquitous in marketing. Hierarchical and non-hierarchical methods are the most popular for segmenting tourism markets. These methods are not without much controversy. In this study, we use bagged clustering on the push and pull factors of Western Europe to segment potential young Chinese travelers. Bagged clustering overcomes some of the limitations of hierarchical and non-hierarchical methods. A sample of 403 travelers revealed the existence of four clusters of potential visitors. The clusters were subsequently profiled on socio-demographics and travel characteristics. The findings suggest a nascent young Chinese independent travel segment that cannot be distinguished on push factors but can be differentiated on their perceptions of the current independent travel infrastructure in Western Europe. Managerial implications are offered on marketing and service provision to the young Chinese outbound travel market.

Keywords: segmentation, bagged clustering, push-pull factors, independent/backpacker travel, Western Europe

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Market segmentation is ubiquitous in marketing. It consists of dividing a market into smaller and homogeneous groups (Kotler and Armstrong, 1999; Kruger, Saayman and Ellis, 2011; Tkaczynski and Rudle-Thiele, 2010), thus allowing a targeted marketing mix to be developed (Dolnicar, Kaiser, Lazarevski and Leisch, 2012). Since the introduction of market segmentation in the late 1950s, the number and type of segmentation approaches have grown immensely (Dolnicar and Leisch, 2004; Liao, Chu and Hsiao, 2012). However, the quality of the market segmentation strategy depends on the quality of the segmentation solution informing it (Dolnicar and Leisch, 2010). The two major approaches for segmenting markets are *a priori* or commonsense segmentation and *a posteriori* or data-driven segmentation (Dolnicar, 2004). The first approach consists of identifying groups using a predefined criterion, for example, nationality that is expected to cause heterogeneity among visitors. In the second approach, groups are identified post-hoc by applying segmentation algorithms (Dolnicar and Leisch, 2004), among which cluster analysis, is the most frequently used (Tuma, Decker and Scholz, 2011). The two most widely applied cluster analysis algorithms are the standard partitioning and hierarchical methods (Dolnicar, 2003; Jain, 2010).

Among standard partitioning or non-hierarchical methods, *k*-means is the most popular in marketing and tourism studies (Arimond and Elfessi, 2001; Dolnicar, 2002, 2003; Jain, 2010; Tuma, Decker and Scholz, 2011). *K*-means clustering aims to group the observations around a center in order to find a segment of the set of units in a fixed number of clusters. It requires three user-specified parameters: number of clusters *k*, cluster initialization, and distance metric (Jain, 2010). Some of the main disadvantages of using *k*-means include: (1) the number of clusters has to be selected in advance on the basis of practical and subjective preferences, i.e. *a priori* or derived from applying a hierarchical clustering method; (2) there is no single optimal solution for determining the best clusters; and (3) stability of the solution is not guaranteed (Arimond and Elfessi, 2001; Dolnicar, 2003). Although many internal validity

indices have been developed, such as the Silhouette and Dunn indexes, to enable researchers in the selection of the appropriate number of clusters (e.g., Handl, Knowles and Kell, 2005), none has yet been accepted globally or applied sufficiently in the tourism field (Brida, Disegna and Osti, 2012). Furthermore, in practice the value of these indices must be interpreted as a guideline rather than an absolute criterion (Vesanto and Alhoniemi, 2000).

Hierarchical methods on the other hand, find clusters by iteratively joining the "closest" clusters composed of one or more observations (agglomerative clustering), or splitting the "furthest" clusters (divisive clustering). Ward's method of hierarchical clustering remains popular in tourism studies (Dolnicar, 2002, 2003; Masiero and Nicolau, 2012). However, hierarchical methods suffer from the limitations of not being able to handle large amounts of data, inflexibility (i.e. once a unit is merged in a group it is impossible to modify its classification), and the results are easily affected by the presence of outliers (Kuo, Ho and Hu, 2002). This method also presupposes an underlying hierarchy among the objects or respondents to be clustered, which may not reflect market reality (Wedel and Kamakura, 2000). To overcome some of the limitations of both hierarchical and non-hierarchical methods, Punj and Stewart (1983) suggest the combination of k-means and Ward's method, and this is known as two-stage clustering. Sheppard (1996) investigating the sequence of analysis in two-stage clustering found that neither was necessarily better than the other. Vriens, Wedel and Wilm's (1996) comparing different methods of clustering found that single stage procedures tend to outperform two-stage clustering procedures on goodness of fit and validation on hold out samples.

Beyond more traditional methods, other popular segmentation algorithms or methods in marketing and tourism include neural networks (Bloom, 2005; Dolnicar, 2002; Mazanec, 1992), latent class analysis (Alegre, Mateo and Pou, 2011; Mazanec and Strasser, 2007) and finite mixture models (Wedel and Kamakura, 2000). Latent class analysis and finite mixture

models are typically problematic with reproducibility, i.e., repeated computations of the algorithm lead to different groupings of respondents (Dolnicar, Kaiser, Lazarevski and Leisch, 2012). In practice, each segmentation algorithm conducts a multivariate description of the data, grouping units based on a suitable similarity measure. Unfortunately, this implies that different methods present different views of the data (Leisch, 2006) and therefore, no absolutely "correct" segmentation method exists (Beane and Ennis, 1987; Brida, Disegna and Scuderi, 2013; Dolnicar, Crouch, Devinney, Huybers, Louviere and Oppewal, 2008; Tkaczynski and Rundle-Thiele, 2010). Hence, the researcher must find the best segmentation method to capture the hidden structure in the data set.

To overcome many of the limitations of traditional clustering algorithms, relatively new techniques such as bagged clustering (Leisch, 1999; Dolnicar and Leisch, 2003) and bi-clustering (Dolnicar, Kaiser, Lazarevski and Leisch, 2012) have emerged in tourism field. Based on the bagging ("bootstrap aggregating") procedure, bagged clustering is a resampling method applied in order to improve the accuracy of the results produced by unstable procedures (Breiman, 1996). Bagged clustering combines sequentially partitioning and hierarchical clustering methods, to overcome some of their limitations. In particular, bagged clustering presents several advantages in comparison to more traditional clustering techniques: 1) it is not necessary to impose the number of clusters in advance; 2) the final solution is less dependent on the initialization of the algorithm; 3) the partitioning methods are more flexible and perform better with large data sets than hierarchical methods; 4) the results are more stable than classic clustering algorithms due to the inherent replication process; 5) the results are less dependent on the data set at hand as numerous bootstrap samples are used as starting points for the repeated calculations; and 6) niche segments can be easily identified compared to classical algorithms such as k-means (Dolnicar and Leisch, 2004; Leisch, 1999). Despite these advantages, surprisingly only five studies to date have

employed bagged clustering in the tourism field (Dolnicar and Leisch, 2000; 2003, 2004; Dolnicar, Crouch, Devinney, Huybers, Louviere and Oppewal, 2008; Brida, Disegna and Scuderi, 2013).

Given this context, the objectives of this study are two-fold. First, using the push/pull framework (Crompton, 1979; Dann, 1977), we segment the motivations of young Chinese travelers using bagged clustering to identify niche segments. Second, we empirically verify if an independent travel segment can be identified based on the motivations and socio-demographic characteristics of young travelers. By doing so, the study's contributions are three-fold. First, the application of bagged clustering to the motivations of young Chinese travelers offers enhanced stability and interpretability of identified segments, leading to more holistic market segments (Dolnicar and Leisch, 2003, 2004). Existing studies on Chinese travel motivations often assume that Chinese travelers are homogeneous and group travel orientations pervade (e.g., Huang and Hsu, 2009; Kau and Lim, 2005; Kim and Prideaux, 2005; Lam and Hsu, 2004). Alternatively, segmentation studies on this market fail to offer stable solutions given that k-means, Ward's method or two-stage clustering are prevalent (e.g., Chen, Bao and Huang, 2013; Hsu and Kang, 2009; Hsu, Kang and Lam, 2006; Kau and Lim, 2005; Li, Zhang, Mao and Deng, 2011). Second, we empirically validate the emerging research strand (Chen, Bao and Huang, 2013; Ong and du Cros, 2012) that suggests the burgeoning of an independent travel segment from China. Third, despite being a key market for Chinese outbound tourists (European Travel Council, 2011), Western Europe as a destination has received scant academic attention in the tourism literature (Arlt, 2006; Corigliano, 2011; Yang, Reeh and Kreisel, 2011). The majority of studies on Chinese travel motivations are situated within the context of regional destinations, such as Korea (e.g., Kim and Prideaux, 2005), Singapore (e.g., Kau and Lim, 2005), Hong Kong (e.g., Huang and Hsu, 2009), and the US (Li, Lai, Harrill, Kline, and Wang, 2011). Thus, we contribute to the

existing literature on motivations of young Chinese travelers to Western Europe. The findings can offer western service providers an insight into the attractiveness of their current tourism offer and subsequently develop marketing propositions that will attract young travelers from China.

Segmenting Markets by Bagged Clustering

The central idea of bagged clustering is to overcome the typical difficulties encountered in cluster analysis by combining the strengths of both hierarchical and partitioning approaches (Dolnicar and Leisch, 2004). Figure 1 schematically shows the steps of bagged clustering.

Figure 1: The steps of the Bagged Clustering method.
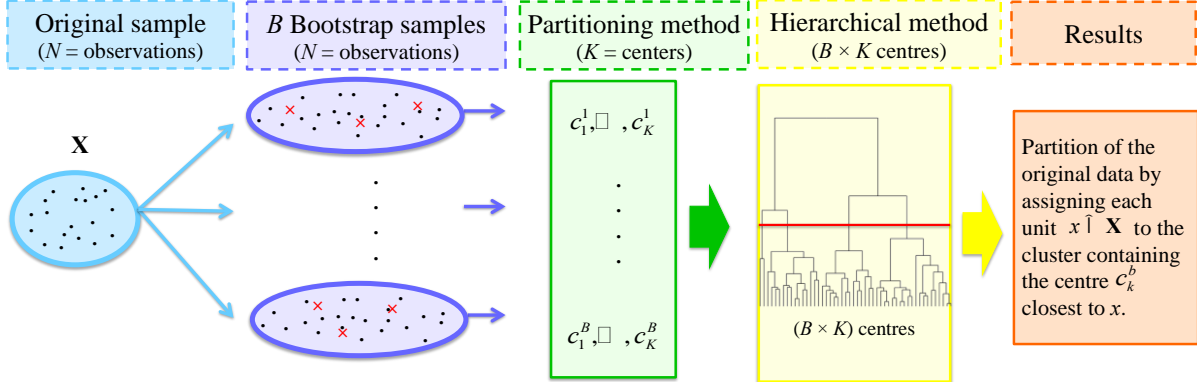
In Figure 1, **X** is the initial dataset of N units on which B bootstrap samples are drawn with replacement. A partitioning method, as the classic k-means algorithm, is chosen by the researcher and is applied to each bootstrap sample. From this procedure, we obtain ($B \times K$) centers, where K is the number of centers fixed in the partitioning method and c_k^b is the k-th center of the b-th bootstrap sample ($k = 1, \ldots, K$; $b = 1, \ldots, B$). The ($B \times K$) centers are combined in a new dataset $\mathbf{C}_{B \times K}$ on which a hierarchical clustering method is run. The result is represented with a dendrogram and the best partition of the centers is obtained investigating

this graphic. Finally, each original unit is assigned to the closest center and, consequently, to the cluster that contains it. In this way, the best partitioning of the original units is also obtained (Dolnicar and Leisch, 2004; Leisch, 1999). The Bagged clustering method offers more stable solution than a partitioning method. In fact, the final result depends on the results obtained running the partitioning algorithm on B bootstrap samples. Consequently, bagged clustering has a less strong dependence on the starting selected centers. The use of bagged clustering also overcomes the issue of selecting the number of groups. Although an initial choice of K is required, it does not affect the final results. The final number of clusters is obtained *a posteriori* as a result of the hierarchical algorithm (Leisch, 1999).

Applying bagged clustering to the motives of winter tourists from the Austrian National Guest Survey, Dolnicar and Leisch (2003) identified stable vacation styles based on five behavioral and seven psychographic profiles of tourists. In another study, Dolnicar and Leisch (2004) successfully employed bagged clustering on summer vacation tourists in Austria and identified five clusters of visitors (active individual tourists, health-oriented holiday makers, really just hanging' arounds, tourists on tour, and individual sightseers. Bagged clustering typically demonstrated superiority in the identification of niche segments. More recently, to examine the heterogeneity among households based on tourism and discretionary income allocation, Dolnicar, Crouch, Devinney, Huybers, Louviere and Oppewal (2008) using bagged clustering, found seven clusters. Some of these clusters would be excellent target markets for tourism providers as the propensity for some of the individuals in these segments to divert additional income into vacations, facing little competition from other spending or investment alternatives, was higher than for other segments. These studies confirm the robustness and preferability of bagged clustering over traditional methods in the identification of meaningful segments among a heterogeneous population.

The Case Study – Young Chinese Travelers to Western Europe

China remains an important outbound tourism market for many western destinations (Li, Harrill, Uysal, Burnett and Zhan, 2010; Ryan and Gu, 2008; Sparks and Pan, 2009). Understanding Chinese consumers' motivations and behaviors is critical for developing effective and engaging marketing strategies. Yet, most studies of Chinese outbound tourism treat this source market as a homogenous segment. This is unsurprising given that tourism through the Approved Destination Status (ADS) scheme is usually restricted to all-inclusive package tours (Sparks and Pan, 2009), which currently requires Chinese leisure travelers to tour in organized groups. Exception to this, is travel to Hong Kong, Macau and Taiwan, where an Individual Visit Scheme (IVS) is available to residents of certain Mainland Chinese cities (Li, Lai, Harrill, Kline and Wang, 2011; Ong and du Cros, 2012). Chinese outbound tourism is diversifying, both in terms of motivations and behavioral practices (Arlt, 2006). Zhang and Lam (1999), for example, identified some differences in travel motivations among Chinese visitors to Hong Kong. Sparks and Pan (2009) put forward that younger Chinese travelers may want more autonomy during their travel. Recent studies (e.g., Bui, Wilkins and Lee, 2013; Chen, Bao and Huang, 2013; Li, When and Leung, 2011; Ong and du Cros, 2012) suggest the emergence of an independent travel segment from China. Specifically, Li, Wen and Leung (2011) found that female Chinese visitors prefer to tour independently and Chen, Bao and Huang (2013) found that Chinese backpackers may not be so different from western backpackers. Bui, Wilkins and Lee (2013) found that Asian independent travelers, including those of Chinese origin, desire 'western cosmopolitanism'. These studies suggest the need for a more nuanced understanding of the heterogeneity in the Chinese outbound tourism market, with particular reference to young travelers. Approximately 65% of all Chinese outbound tourists are young or middle aged individuals between 25 to 44 years old and well educated (Tourism Review, 2012).

Understanding Motivations-The Push/Pull Framework

Motivations are cognitive in nature and assist in explaining many aspects of tourist behavior (Fodness, 1994; Gnoth, 1997). Over the years, many motivation theories and models such as the hierarchy of needs (Maslow, 1943), the distinction between allocentric and psychocentric (Plog, 1974), expectancy-value theories (Lewin, 1938), goal directed behavior (Bettman, 1979), travel career ladder (Pearce and Lee, 2005), motivation and expectation formation (Gnoth, 1997), and the push-pull framework (Dann, 1977; Klenosky, 2002) have sought to explain tourist motivations. The most popular theory remains the push/pull framework that provides a simple and intuitive approach for explaining tourist motivations (Dann, 1977; Prayag and Hosany, 2014). Push factors represent tourists' generic desire to travel while pull factors represent destination attributes influencing when, where and how people travel (Mill and Morrison, 1998). Hence, push factors can be considered the socio-psychological motives of travel (Crompton, 1979) and pull factors represent destination attributes (Klenosky, 2002; Yuan and Mcdonald, 1990) or images (Gartner, 1993; Prayag and Ryan, 2011). The push/pull theory of motivation may also represent the demand and supply side of the tourism industry respectively (Formica and Uysal, 2006) and remains a parsimonious analytical framework for explaining tourist travel decisions (Li, Meng, Uysal and Mihalik, 2013; Prayag and Hosany, 2014). Given the complexity of the motivation construct (Gnoth, 1997), some authors believe that push and pull factors should be studied separately (e.g. Dann, 1977; Fodness, 1994) and others consider them to be interdependent (Baloglu and Uysal, 1996; Klenosky, 2002; Prayag and Ryan, 2011). Pull factors occur only as a result of the push factors (Dann, 1977). Consequently, three distinct research approaches to the application of the push/pull framework have emerged in the tourism literature. The first strand of research uses push factors only (e.g., Dann, 1977; Fodness, 1994; Sirakaya, Uysal and Yoshioka, 2003; Snepenger, King, Marshall and Uysal, 2006), either for furthering

understanding of the concept itself or for benefit segmentation purposes. Alongside, some studies have used pull factors only (Gavcar and Gursoy, 2002; Prayag, 2010) or both (Crompton, 1979; Fluker and Turner, 2000; Klenosky, 2002; Kim, Lee and Klenosky, 2003; Prayag and Hosany, 2014; Tkaczynski, Rundle-Thiele and Beaumont, 2010) for the same purposes.

Push/Pull Factors of Chinese Travelers to Western Europe

The level of interest in Europe as a "dream destination" is high among the Chinese outbound market (ETC, 2011). Yet, tourism researchers are failing to keep speed with this emerging, and notably, diversifying market (Arlt, 2006). Few academic studies have sought to understand the motivations of Chinese visitors to Western Europe. Corigliano (2011), for example, found that the major push/pull factors to Italy included visiting renowned destinations, museums and art galleries, places of historical and cultural interest, the discovery of natural landscapes, visiting rural destinations, participation in local events, visiting local residents and experiencing local crafts. The findings depart from the mainstream motivations of Chinese travelers in the sense that they reflect a deeper interest in perceived authentic experiences that may involve a higher level of contact with locals. This is related perhaps to the demographics of visitors in Corigliano's study (mainly below the age of 35). In another study, Yang, Reeh and Kreisel (2011) found that novelty, knowledge, experiencing an interesting event with whole family (socialization), relax and fun, and improvement of relationships with colleagues (kinship) were the main motives for Chinese visitors to experience the Oktoberfest in Germany. Yun and Joppe (2011) investigating the appeal of seven long-haul destinations among Chinese visitors, found that the UK, France and Germany were perceived the least favorably for outdoor activities. While France had a strong appeal on cultural factors, Germany and the UK had unfavorable perceptions on this factor. Industry reports suggest that shopping remains an important activity in packed multi-country itineraries

for Chinese visitors to Europe (Visit Scotland, 2012) and language can be a barrier (Visit Britain, 2012). Yet, a growing number of independent travelers from China have a good command of English (Visit Scotland, 2012).

Motivations of Independent Travelers

Hyde and Lawson (2003) consider backpackers to be a segment of the independent travel market, whereas Nash, Thyne and Davies (2006) perceive the two roles as largely synonymous. In this study, we adhere to the view that backpackers and independent travelers are largely synonymous. Hence, we define independent travelers as those "who have flexibility in their itinerary and some degree of freedom in where they choose to travel within a destination region" (Hyde and Lawson, 2003:13). The motivations and behaviors of independent travelers are well researched (e.g., McNamara and Prideaux, 2010; Loker-Murphy, 1996; Mohsin and Ryan 2003; Maoz, 2007; Paris and Teye, 2010), with some dispute over whether they actually differ from those of package mass tourists (see Larsen, Øgaard and Brun, 2011). Nonetheless, core push factors for independent travel identified in past studies include: exploring other cultures, increasing one's knowledge, relaxing mentally, affiliation or social motives, seeking novelty and action, and desiring a perceived authentic or genuine experience (Loker-Murphy, 1996; Moscardo, 2006; Paris and Teye, 2010). The supply side of this market (pull factors) has been an additional line of inquiry. For example, Loker-Murphy and Pearce (1995) found independent travelers to have a preference for budget accommodation and an emphasis on meeting other people during their trip. Nash, Thyne and Davies (2006) examining levels of importance and satisfaction amongst budget accommodation users in Scotland, found that the choice of accommodation was driven by factors such as price, location, cooking and bathroom facilities, availability of information, safety, price promotions and ease of booking facilities, amongst others. Hecht and Martin (2006) focusing on the service preferences of hostel users in Canada found that the top five

service preferences were cleanliness, location, personal service, security, and other services such as internet and laundry facilities. Recent literature, still oriented largely from a western perspective, recognizes increased heterogeneity in independent travel (e.g., Cohen, 2011; Paris, 2012; Uriely, Yonay and Simchai, 2002). Accordingly, Pearce and Foster (2007:1285) describe independent travelers as "a mobile, usually younger market segment who exhibit a preference for budget accommodation, emphasize meeting other travelers, follow an independently organized and flexible travel schedule, pursue longer rather than very brief holidays and prefer informal and participatory activities".

The Emerging Chinese Independent Travel Market

The Economist (2010, np) predicts that Chinese independent travel in Western Europe is "the next big thing", and there is already evidence of Chinese visitors, whether through purposes of study, business and/or visiting friends and relatives, using Schengen visas to access multiple European countries on a single trip, wherein they are beginning to use backpacker facilities, such as hostels (cf. Hostelworld.com, 2012). There is a paucity of information on Chinese independent travel, with the notable exceptions of Ong and du Cros (2012) and Chen, Bao and Huang (2013). The former examines the experiences of Chinese backpackers to Macau via the Individual Visit Scheme while the latter identifies segments of Chinese backpackers based on their travel motivations. The phenomena is also examined in a domestic context by Lim (2009: 293), who suggests that Chinese backpackers are "highly educated, largely urban-based, upwardly mobile professional adults who are among the chief beneficiaries of China's recent socio-economic development". The younger generation of outbound Chinese travelers (under age 35) are not only the future main Chinese travel market, but also show signs that they are different from older generations, as they are more adventurous and seek more autonomy during their travel (Sparks and Pan, 2009). Chen, Bao and Huang (2013) using mostly western motives, uncovered four main motives of Chinese

backpackers: social interaction, self-actualization, destination experience, and escape/relaxation. However, they use *k*-means clustering to subsequently identify segments, casting doubt on the reproducibility of these segments. Nevertheless, their findings suggest a convergence of Chinese independent travelers' motivations with their western counterparts. Despite Chinese independent travelers manifesting certain common features with backpackers generally, they tend to exhibit Chinese characteristics (Lim, 2009). Specifically, within the Chinese independent travel market, segments can be identified on the basis of age, education level and income. For example, social seekers driven by motives of social interactions are largely below 20 years, well-educated and earn below 1,500 RMB per month (Chen, Bao and Huang, 2013).

Empirical Illustration

Data

Data in this study were collected from a consumer survey of young Chinese travelers in Beijing with Western Europe as the target destination. Beijing was selected for its trend setting status in lifestyle factors and known high propensity to travel (Hsu, Cai and Li, 2010). There is also evidence that an independent travel market is emerging from cities such as Beijing, Shanghai and Guangzhou (Lim, 2009; Ong and du Cross, 2012). Two trained interviewers were stationed outside high street shopping centers, leisure centers, western restaurants and coffee chains, tourist attractions, subway stations, and local universities, similar to the study of Hsu, Cai and Li (2010). A screening question (are you interested in traveling to Western Europe in the next five years?) was used to identify the correct target population of young Chinese travelers of 18 to 44 years old. While recognizing that travel interest may not convert into actual travel (McKercher and Tse, 2012), this population group is not only the largest group, but also has the highest propensity to travel either in groups or

independently. Within this group, the 30 to 44 years old is a well-educated segment in their prime earning years (Tse and Hobson, 2008). The younger generation is also more autonomous (Sparks and Pan, 2009) and specifically the 21 to 35 years old are well educated and part of an emerging Chinese independent travel segment (Chen, Bao and Huang, 2013). After explaining the purpose of the study, respondents were asked to fill in the questionnaire on site. Of the 600 distributed questionnaires, 403 were useable.

The measurement for motivation was developed from previous studies on mainstream Chinese outbound travelers (Corigliano, 2011; Hsu, Cai and Li, 2010; Kim and Prideaux, 2005; Li, Wen and Leung, 2011; Sparks and Pan, 2009; Yun and Joppe, 2011; Zhang and Lam, 1999) and independent travelers/backpackers generally (e.g., Moscardo, 2006; McNamara and Prideaux, 2010; Paris and Teye, 2010; Pearce and Foster, 2007), and adapted for the purpose of the study. A list of 10 push factors depicting motivations such as knowledge, social interaction, sight-seeing, prestige, shopping, and relaxation was measured on a 7-point scale, anchored on [1] *Not at all important* and [7] *Very important*. The 17 pull factors measured the attractiveness of amenities, facilities and services offered to independent travelers/ backpackers and Chinese package tourists generally. The items were measured on a 7-point scale anchored on [1] *Strongly disagree* and [7] *Strongly agree* and adapted from the literature (e.g., Hecht and Martin, 2006; Li, Lai, Harrill, Kline and Wang, 2011; Wang, Vela and Tyler, 2008). Demographics, including gender, marital status, age, level of education, and income, as well as traveling characteristics, such as type of preferred accommodation, proposed length of stay on a trip to Western Europe, countries most likely to visit, and information sources most likely to use to plan a trip, were also measured. The survey instrument originally designed in English was translated to Chinese. Back translation was used to assess the accuracy of meaning and content of the Chinese version. The translated version was further verified by one Chinese professor proficient in both languages. The

questionnaire was pilot tested in Beijing among 20 respondents from the targeted group and revealed only minor problems that were subsequently amended in the final version.

The demographic profile of the sample indicated that the majority of respondents were females (56.8%), mostly single (63.2%), less than 26 years old (54.1%), with some university/college degrees (59.4%) or postgraduate degrees (36.8%), earning an average monthly income of less than RMB 7,000 (69.3%). Of the respondents, 52.4% had a full time job while 42.1% described themselves as students. Respondents will travel for holiday (81.6%) and studying purposes (20.1%) mostly. First-time visitors (77.4%) to Western Europe would constitute the majority. In general, Chinese outbound travelers to Europe tend to be well educated with the highest proportion having a bachelors' degree and earning between RMB 3,000 to RMB 10,000 a month (Euromonitor, 2011). This profile of general Chinese travelers resonates well with the education level and monthly income of our sample. Bui, Wilkins and Lee (2013) found that Asian independent travelers are typically between 20 and 37 years old, which suggest that the age profile of our sample fits within the general trend of independent travelers. Also, individual travelers from China visiting Europe include Chinese students studying in Europe who may travel as part of their stay abroad, adventurous young professionals, and family and friends of students who visit and travel around with them (Euromonitor, 2011). This sample echoes some of these characteristics, suggesting that the overall profile of the sample has close resemblance to that of young Chinese outbound travelers and those undertaking independent travel in Europe.

Data Analysis

Given that push and pull factors are interdependent (Baloglu and Uysal, 1996; Klenosky, 2002) and that motivations have greater ability to segment tourist markets than socio-demographics (Masiero and Nicolau, 2012), the 10 push factors and 17 pull factors were used

simultaneously for bagged clustering. Appendix A reports the legend used in the following analysis. The bagged clustering algorithm considered the k-means as the partitioning method, with K=20 centers and 10,000 iterations used as the base method. A number of bootstrap samples (B=100) were considered, resulting in a total of 2,000 centers, which were then hierarchically clustered using Euclidean distance and Ward's agglomerative linkage method. These parameters were chosen because they provided the best performances in previous studies, which used simulated artificial datasets with similar characteristics to the one in this study (Dolnicar and Leisch, 2004). Figure 2 shows the dendrogram derived from this procedure. The plot under the dendrogram in Figure 2 shows the distance of aggregation for each cluster, where the black line reports standardized absolute heights and the grey one stands for first differences. The accentuated bend in the grey line suggests that the suitable number of clusters is two or four. These correspond to cutting the dendrogram where the longest distance between two consecutive aggregations appears. Given that the purpose of this study is to identify segments of young travelers with a particular focus on niche segments, the four cluster solution is interpreted.

Figure 2: BC dendrogram and plot of the relative height of aggregation (black line) and the first differences (grey line).
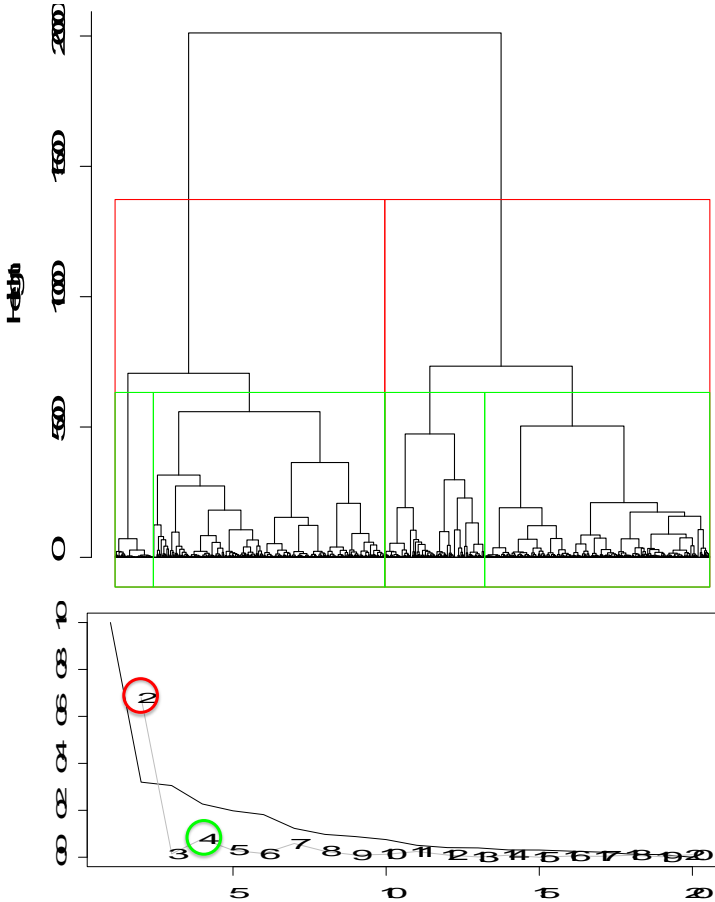
Results

Cluster Description

The box plots in Figure 3 allow investigation of the distribution and interpretation of the cluster centers with respect to the segmentation variables used and the segments identified. The red line that runs across all the box-plots of a specific cluster, reports the sample mean of each variable. For the sake of interpretation, it is important to emphasize that the higher the height of the grey box (i.e. interquartile range), the smaller the homogeneity of the segment with respect to the variable considered. This implies that segments are better characterized by

those variables presenting low dispersion, and that the stronger the dispersions of variables among segments, the more dissimilar the segments are.

Figure 3: Box-plots for the four clusters solution.

Cluster 1: 778 centers, 123 data points

Cluster 2: 129 centers, 22 data points

Cluster 3: 336 centers, 39 data points

Cluster 4: 757 centers, 119 data points
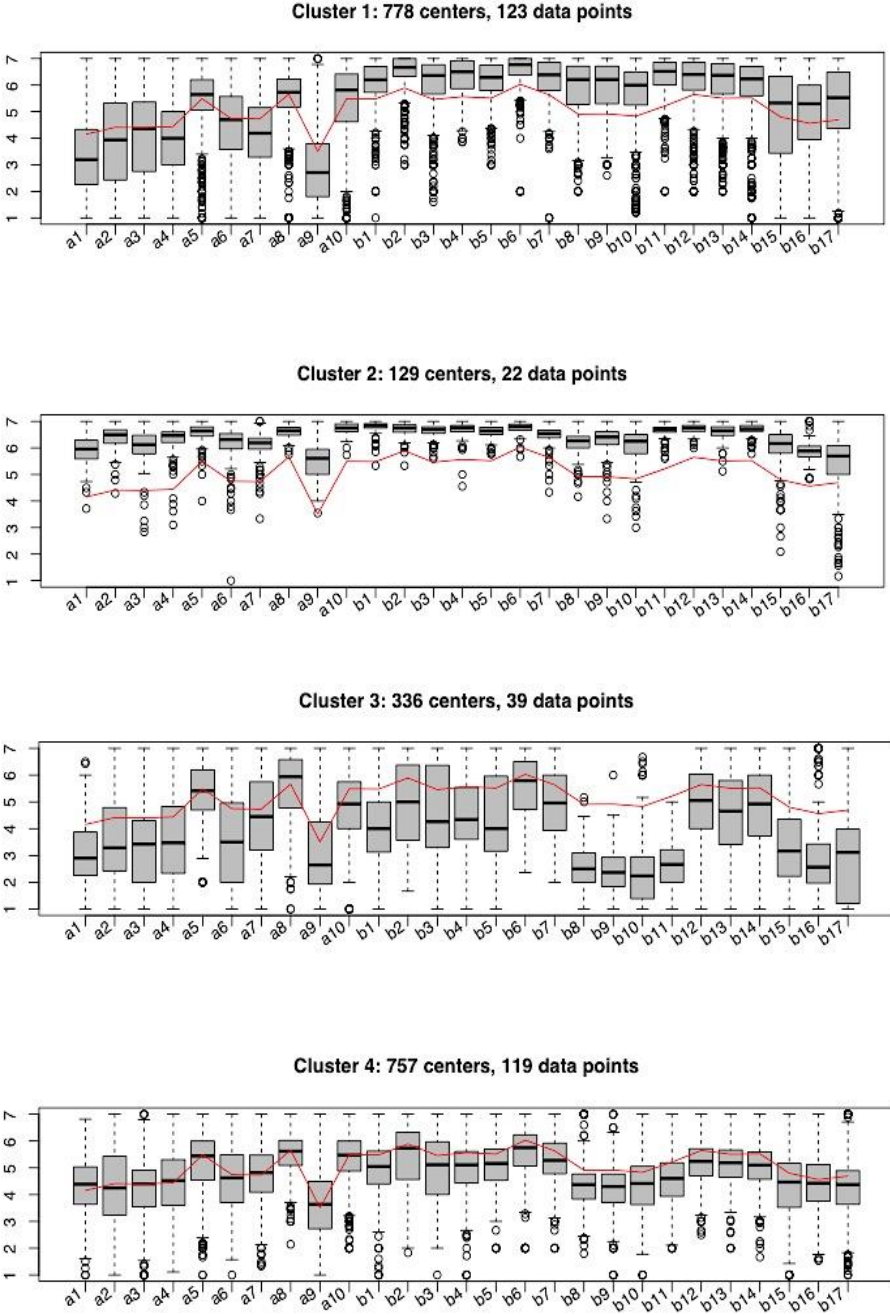
Two niche segments, clusters 2 and 3, emerged, and Kruskal–Wallis tests with ties were significant at $p \leq 0.01$ for all segmentation items, indicating that significant dependencies between items and groups exist. Cluster 1, consisting of 123 respondents, are Chinese

potential travelers that cannot be distinguished from other clusters on the level of importance attached to push factors. However, they can be distinguished on pull factors such as Hotel/Hostel has a good reputation ("b1"), Hotel/Hostel has clean kitchen, bedroom and bathroom ("b2"), adequate facilities in room ("b4"), front desk open 24 hours ("b5"), internet facilities on site ("b6"), restaurants serving Western and Asian fusion food with Chinese menus ("b9"), Chinese speaking staff at hotel ("b10") and destination information available in Chinese ("b11"), where they generally agree to strongly agree that the destination must offer such services, facilities and amenities. These visitors would use the present general infrastructure available for visitors in Western Europe, including backpacker infrastructure, but also want services to be customized in Chinese. These visitors desire the essential services, amenities and facilities offered to Chinese and western visitors in general. Accordingly, this cluster was named "*Essentials*". Cluster 2 (22 respondents) is homogeneous in assigning high levels of importance to almost all of the push factors. This indicates a cluster that is driven by motives of socialization ("a1"), learning and discovery ("a6" and "a7"), prestige ("a4" and "a5"), relaxation ("a10") and self-fulfillment ("a2" and "a3"). These respondents also tend to agree/strongly agree to Western Europe offering most of the pull factors presented. However, they are less interested in shopping ("a9") and are neutral about Western Europe Hotel/Hostel offering same sex rooms ("b17"). These visitors are the most exigent in terms of the services, amenities and facilities offered in Western Europe and their motivations are the most closely aligned to mainstream Chinese and partly to independent travelers. Accordingly, this cluster was named "*Exigent*". Cluster 3, consisting of 39 respondents, is homogeneous with respect to visitors who consider of lesser importance interactions with local people ("a1"), indicative of socialization not being an important motive for traveling to Western Europe. This cluster is also homogeneous with regards to the relatively low levels of importance attached to Western Europe having hotel/hostels with

good reputation ("b1"), restaurants serving western food with Chinese menus ("b8") and western and Asian fusion food with Chinese menus ("b9"). Furthermore, they don't agree that Hotel/Hostel must offer Chinese speaking staff at hotel ("b10"), destination information must be available in Chinese ("b11"), and safety deposit boxes provided in hotels ("b16"). Clearly, these visitors attach low importance to personalization of services and facilities in Chinese. Accordingly, this cluster was named "*Low Personalization*". Finally, cluster 4 (119 respondents) had no particular attitudes given that they could not be differentiated from the other clusters on the basis of the push factors and could only be differentiated on the basis of two pull factors, restaurants serving western food with Chinese menus ("b8") and restaurants serving western and Asian fusion food with Chinese menus ("b9"). In general, they rated many of the push and pull factors as neutral but rather agreed that they are "pushed" by visiting famous cultural and historical attractions ("a5"). They generally disagreed that they would visit Western Europe for shopping ("a9"). Hence, these visitors were named "*Neutrals*".

Cluster Profiling

The additional information collected in the survey were used to characterize the clusters in terms of socio–demographics (gender, age, income) and travel characteristics of a possible trip to Western Europe (purpose, duration, destination, information source). Appendix B reports the complete list of these profiling variables with a brief description of each. Regarding the socio-demographics, Chi-square test results revealed statistically significant differences between the four clusters on gender, monthly income, level of education, and employment status (Table 1). "*Essentials*" and "*Exigent*" clusters had the highest proportion of females (67% and 68% respectively) and the highest proportion of travelers with at most a University/college degree (72% and 82% respectively). The income levels were collapsed into two categories and the results indicated that travelers earning less than RMB 3,000 a month,

constituted a high proportion of "*Exigent*" (68%) and "*Neutrals*" (60%) visitors. The variable employment status was also recoded and the results revealed that the "*Low Personalization*" group had the highest proportion of full-time employed travelers (64%) while the "*Neutrals*" had the lowest proportion (39%). On the basis of travelers' preferences for organizing their trip, accommodation, length of stay, the person they will be traveling with on their next trip to Western Europe, and main purpose of travel, no significant differences emerged between the four clusters, indicating that past ways of conceptualizing backpackers, as characterized by a minimum of organized activities, a preference for budget accommodation, and traveling mainly for holiday or recreational purposes, might not be relevant for the young Chinese market. In terms of preferences for non-personal sources of information, significant differences existed between the four clusters on the choice to use a guidebook, whereby the "*Low Personalization*" (77 %) and "*Essentials*" (71%) clusters would not use this source of information and "*Exigent*" travelers (50%) would use it. Likewise, a significant difference existed between the clusters on the basis of the destinations that they are most likely to visit in Western Europe. The "*Exigent*" and "*Essentials*" group had the highest proportion of potential travelers that want to visit France (91% and 79% respectively), Greece (77% and 57% respectively), and Switzerland (68% and 58% respectively) and a high proportion of travelers in the "*Exigent*" (45%) and "*Neutrals*" (38%) groups also wanted to visit the Netherlands.

Table 1: Profiling of clusters by socio-demographic characteristics

Variables	Whole sample	CL1 "Essentials"	CL2 "Exigent"	CL3"Low Personalization"	CL4 "Neutrals"	χ^2
Socio-demographic characteristics						
Female	57.10	66.67	68.18	48.72	47.9	10.93**
< RMB 3,000 monthly income	51.18	44.63	68.18	35.90	60.00	11.85***
Single	64.19	59.50	72.73	57.89	69.57	3.95
University/college degree or above	65.22	71.54	81.82	55.26	58.62	8.73**
18-25 years old	54.82	49.59	59.09	51.28	60.68	3.34

Full-time employee	50.33	58.54	40.91	64.10	38.98	13.13***

Trip characteristics

Preferred type of accommodation: 3-5 star Hotel	41.39	43.09	40.91	46.15	38.14	1.03
First time visitors of Western Europe	77.44	79.51	80.95	63.16	79.31	5.12
Estimated duration of the next trip in Western Europe: less than 2 weeks	59.14	59.35	45.45	66.67	58.97	2.62
Party group of the next trip in Western Europe: family or partner	56.42	60.16	63.64	44.44	54.78	3.39

Main Purpose of travel

VFR	2.97	2.44	4.55	2.56	3.36	0.40
Study	21.12	20.33	18.18	15.38	24.37	1.69
Work	4.95	2.44	4.55	10.26	5.88	4.21
Holiday	82.51	84.55	86.36	82.05	79.83	1.18

What destinations are you most likely to visit?

UK	53.80	58.54	54.55	46.15	51.26	2.34
Italy	53.80	49.59	54.55	58.97	56.30	1.60
Belgium	13.20	16.26	13.64	10.26	10.92	1.84
Portugal	10.23	10.57	4.55	5.13	12.61	2.63
France	73.27	78.86	90.91	69.23	65.55	9.41**
Switzerland	53.80	57.72	68.18	38.46	52.10	6.42*
Ireland	16.17	18.70	9.09	10.26	16.81	2.44
Netherlands	31.02	22.76	45.45	28.21	37.82	8.77**
Germany	39.93	39.84	54.55	43.59	36.13	2.89
Spain	39.93	38.21	54.55	28.21	42.86	4.77
Austria	21.78	22.76	13.64	23.08	21.85	0.97
Greece	48.84	56.91	77.27	35.90	39.50	17.1***

What information source are you most likely to use to plan your trip to Western Europe?

TV or radio advertising	15.18	12.20	13.64	12.82	19.33	2.65
Guidebook	33.66	29.27	50.00	23.08	38.66	6.98*
Internet search engine	77.56	81.30	72.73	69.23	77.31	2.84
Travel agency	41.25	45.53	31.82	38.46	39.50	2.01
Travel forums & blogs	48.18	51.22	36.36	51.28	46.22	2.02
Special magazine	31.68	31.71	27.27	28.21	33.61	0.62

All test results are not significant unless indicated otherwise: ***Significant at $p \leq 0.01$, **Significant at $p \leq 0.05$, *Significant at $p \leq 0.1$.

The membership of each cluster was further analyzed using a multinomial logit model to enhance characterization of each cluster. The logit model was specified to show the socio-demographics and trip characteristics that significantly influenced the likelihood of respondents being part of one of the clusters with respect to the baseline group. In this study, the baseline group is the "*Neutrals*" (Cluster 4), given that they cannot be distinguished on any of the push factors and most of the pull factors. Regression models were estimated using White's (1980) robust variance-covariance matrix in order to correct for the possible heteroskedasticity of the error terms. Table 2 reports the estimated coefficients.

Table 2: Results of the multinomial logit model

Independent variables	CL1 "Essentials"	CL2 "Exigent"	CL3 "Low Personalization"
Socio-demographic characteristics			
Female	1.019 (0.34)***	0.846 (0.69)	0.424 (0.49)
Less than RMB 3,000 monthly income	0.031 (0.87)	2.165 (1.99)	-2.534 (0.91)***
Single	0.177 (0.57)	1.069 (1.12)	-0.542 (0.86)
University/college degree or above	0.819 (0.34)**	1.864 (1.02)*	-0.263 (0.59)
18-25 years old	0.529 (0.68)	-2.932 (1.81)	2.519 (0.88)***
Full-time employee	1.494 (0.74)**	0.208 (2.45)	0.331 (0.74)
Trip characteristics			
Preferred type of accommodation: 3-5 star Hotel	-0.168 (0.38)	0.718 (0.72)	-0.123 (0.53)
First time visitors of WE	-0.142 (0.41)	0.019 (0.8)	-1.024 (0.59)*
Estimated duration of the next trip in WE: less than 2 weeks	0.263 (0.36)	-0.315 (0.74)	0.426 (0.53)
Party group of the next trip in WE: family or partner	0.294 (0.36)	0.43 (0.7)	-0.953 (0.59)
Main Purpose of travel			
VFR	-0.663 (0.92)	2.182 (1.98)	-0.412 (1.76)

Study	-0.012 (0.45)	-0.27 (0.87)	-0.532 (1.05)
Work	-0.496 (0.84)	-1.181 (1.55)	0.098 (1.46)
Holiday	0.189 (0.54)	0.454 (0.79)	-0.328 (0.98)

What destinations are you most likely to visit?

UK	0.174 (0.34)	-0.211 (0.6)	-0.45 (0.46)
Italy	-0.555 (0.39)	-1.455 (0.77)*	0.754 (0.59)
Belgium	0.948 (0.56)*	0.687 (0.79)	-0.383 (1.1)
Portugal	-0.536 (0.71)	-1.17 (1.64)	-40.274 (1.19)***
France	0.48 (0.41)	1.894 (0.97)*	-0.022 (0.48)
Switzerland	0.235 (0.37)	0.64 (0.84)	-1.028 (0.57)*
Ireland	0.372 (0.58)	-2.017 (1.12)*	-0.805 (1.09)
Netherlands	-1.264 (0.41)***	1.091 (0.63)*	-0.207 (0.57)
Germany	-0.047 (0.36)	0.884 (0.64)	0.611 (0.53)
Spain	-0.343 (0.36)	0.052 (0.6)	-0.844 (0.59)
Austria	0.288 (0.47)	-0.823 (0.92)	-0.169 (1.02)
Greece	0.442 (0.38)	2.239 (0.71)***	0.144 (0.57)

What information source are you most likely to use to plan your trip to Western Europe?

TV or radio advertising	-0.823 (0.48)*	0.257 (0.73)	-1.518 (1.14)
Guidebook	-0.47 (0.34)	0.288 (0.68)	-1.187 (0.67)*
Internet search engine	0.114 (0.39)	0.571 (0.77)	-0.91 (0.73)
Travel agency	0.388 (0.32)	-0.462 (0.53)	0.017 (0.53)
Travel forums & blogs	-0.114 (0.34)	-2.025 (0.72)***	0.036 (0.57)
Special magazine	0.132 (0.36)	-0.011 (0.65)	-0.129 (0.65)
Constant	-2.545 (1.1)	-7.152 (3.65)*	1.89 (1.66)

Notes: All test results are not significant unless indicated otherwise: ***Significant at $p \leq 0.01$, **Significant at $p \leq 0.05$, *Significant at $p \leq 0.1$. Robust Std. Err. in brackets. $N = 278$; Wald chi2(96) = 6058.09; Prob > chi2 = 0.00; Pseudo $R^2 = 0.2326$; McFadden $R^2 = 0.233$; Cox & nell $R^2 = 0.423$; Nagelkerke $R^2 = 0.467$.

The results confirm some of the previous findings. Specifically with respect to the baseline group, we can note that: females are more likely to be members of the "*Essentials*" segment; travelers with a monthly income of less than RMB 3,000 are less likely to be members of the "*Low Personalization*" cluster; travelers with at most a university/college degree are more likely to be members of the "*Essentials*" and "*Exigent*" segments; full-time

employees are more probably "*Essentials*" travelers. In addition, from this analysis it emerged that young travelers (18-25 years old) are more likely to be members of the "*Low Personalization*" cluster, while first–time visitors are less likely to be members of this segment. In terms of destination preferences, travelers who want to visit Belgium but not Netherlands are more probably grouped in the "*Essentials*" segment. "*Exigent*" travelers are more likely to visit France, Netherlands and Greece, but they are not attracted to Italy and Ireland. Travelers who want to visit Portugal and Switzerland less probably will be members of the "*Low Personalization*" segment. Referring to the information sources that travelers want to use in planning their future trip to Western Europe, we note that those who want to use TV or radio advertising are less likely to be members of the "*Essentials*" group; those who want to use travel forums and blogs are less likely to be members of the "*Exigent*" group; and those who want to use a guidebook are less likely to be members of the "*Low Personalization*" segment.

Overall these results suggest that, with respect to the baseline group, female full-time employees would visit Belgium without using TV or radio advertising to plan the trip, and they will want the "*Essentials*" in terms of services to find Western Europe attractive as a destination. The "*Exigent*" travelers do not exhibit any particular characteristics with respect to their socio-demographics and trip characteristics. This cluster is more likely formed by travelers who want to visit France, Netherlands or Greece, without using travel forums and blogs to plan their next trip. The "*Low Personalization*" cluster is young travelers who have visited Western Europe previously, having the income level to do so. They do not want to visit Portugal or Switzerland, and will most likely not use a guidebook to plan their next trip to Western Europe.

Discussion and Implications

The main objective of this study was to segment young potential Chinese travelers to Western Europe based on their motivations, using bagged clustering, and to identify whether an independent travel segment exists among such travelers. The results indicate the existence of four segments that portend the emergence of an independent young travel market from China. From a methodological perspective, the use of bagged clustering for segmenting motivations confirms the preferability of the method over the more traditional clustering methods for niche segment identification. In line with previous studies (Dolnicar and Leisch, 2003, 2004), the identified segments are stable and reproducible unlike many other segmentation studies (Chen, Bao and Huang, 2013; Hsu, Kang and Lam, 2006; Kau and Lim, 2005; Li, Zhang, Mao and Deng, 2011; Maseiro and Nicolau, 2012) in the tourism field that rely on hierarchal or non-hierarchical methods exclusively. The identified segments conform to prior knowledge on the Chinese market of the existence of two major travel orientations in the outbound market, group and independent travel (Li, Wen and Leung, 2011; Sparks and Pan, 2009). The identified segments integrate more than one dimension of tourist motivation in clustering, both push and pull factors were used simultaneously to identify the clusters. Hence, bagged clustering offers a more holistic perspective of travelers and reflects more accurately an inherent structure in a population (Dolnicar and Leisch, 2003). Likewise, the interpretation and simplistic visualization advantages (e.g., Figure 3 box-whisker plots) of bagged clustering offer managers a simple tool to understand what variables differentiate each segment and this information can be valuable for positioning and advertising purposes.

From a managerial perspective, the overwhelming finding of this study is that there is an emerging independent travel segment among young Chinese outbound travelers. Unlike the study of Chen, Bao and Huang (2013) that identified several segments of independent travelers from the push factors of young Chinese travelers, we found pull factors (services,

amenities and infrastructure provision) to be more apt at identifying an emerging independent travel segment. The "*Essentials*" are most likely to be female travelers, educated, employed full-time, and want the amenities, services, and facilities in Western Europe customized to the Chinese market. This segment certainly does not exhibit the characteristics of an emerging independent travel segment. They are exigent in terms of the cleanliness of accommodation facilities, want service providers to have a good reputation, and offer adequate facilities in room. The findings conform to previous studies (e.g., Li, Lai, Harill, Kline and Wang, 2011) on service expectations of mainstream Chinese travelers who are mostly package tourists. A preference for more facilities and services offered would not be unique to Chinese independent travelers. Hecht and Martin (2006) found that Asian travelers in general were more demanding of services offered in western hostels.

The "*Exigent*" are driven by western (e.g., Loker-Murphy and Pearce, 1995; Mohsin and Ryan, 2003) and Chinese independent travel (e.g., Chen, Bao and Huang, 2013) motivations of socialization, learning and discovery, self-fulfillment and relaxation. These motives are not unique to Chinese independent travelers but commonly associated with Asian independent travelers from Japan, Thailand, Malaysia and South Korea in general (Bui, Wilkins and Lee, 2013). Similar to other Asian independent (Bui, Wilkins and Lee, 2013) and package travelers (Kim and Prideaux, 2005), young Chinese travelers are also motivated by prestige. This reflects not only the motive of many mainstream Chinese travelers to visit the western world but may also suggest the need for accumulating social capital to assert a new middle class identity upon returning home (Maoz, 2007). The "*Exigent*" are most likely to be females, educated, earning less than RMB 3,000 a month, and driven by mostly by pull factors. This segment exemplifies a blurring, or de-differentiation (Uriely, 2005), of the borders between independent and group travel. This occurrence may be due to the "infancy" of Chinese independent travel, but it may also represent a breakdown in distinctions between

tourist roles (Yiannakis and Gibson, 1992), in which what may seem a contradiction in tourist behavior – the blending of independent and group travel – is not experienced as such by its practitioners.

The "*Low Personalization*" segment is particularly interesting as they exhibit some of the characteristics of an emerging Chinese independent travel market (self-fulfillment and relaxation) suggested in other studies (Chen, Bao and Huang, 2013). However, they are not motivated by socialization which is not uncommon to the behavior of mainstream Asian travelers (Kim and Prideaux, 2005). The motive of socialization is an important characteristic of western independent travel (Loker-Murphy and Pearce, 1995; Mohsin and Ryan, 2003), but recent research (e.g., Larsen, Øgaard and Brun, 2011) suggests that this may no longer hold true, at least in a physical sense. An emerging Chinese independent travel scene values communication via virtual online communities, suggesting that virtual socializing with other travelers may take priority over socializing at the destination (Lim, 2009). Given that this segment relies on the internet, travel forums and blogs for planning their trip may just as well reflect this behavior. This segment also consists of full-time employed, well educated (post-graduate), young (18-25 years old), and repeat visitors, who are also driven by similar push and pull factors as the "*Exigent*". However, they do not expect Western Europe to personalize existing services, amenities and facilities to Chinese expectations. This segment will be particularly attractive to service providers in Western Europe. The "*Neutrals*" are not driven by shopping, are mostly students or unemployed, and earn less than RMB 3,000 a month. They are mostly indifferent to the pull factors. Hence, this segment may not be an attractive segment for service providers in Western Europe.

Overall, the findings confirm that any nascent Chinese independent travel market is unlikely to be motivated by previously identified travel motives for western and Chinese independent travelers exclusively. Larsen, Øgaard and Brun (2011) confirm that few

differences on motivation persist between western independent travelers and mainstream tourists, suggesting that motives may not be sufficient as a psychological variable to explain visitor behavior. An emergent independent travel market from China is most likely to exhibit some similarities in motives of group Chinese travelers to Western Europe. Nevertheless, the findings have important managerial implications for developing independent travel infrastructure in Western Europe, service provision to young Chinese travelers and destination marketing. The existing independent travel infrastructure in Western Europe has some appeal to young Chinese travelers. Specifically, they are interested in flexible transport options such as rail travel passes and hop-on/hop-off coach pass options. In terms of accommodation, the "*Essentials*" and "*Exigent*" typically value cleanliness of facilities, a kettle for hot water in room, complimentary linen and towels, front-desk open 24 hours, and internet facilities on-site. Accommodation closer to major attractions and transport facilities are likely to fair better with these segments. Such desired amenities and facilities are also essential for mainstream travelers from China (Li, Lai, Harrill, Kline and Wang, 2011), but these preferences of the younger market may well reflect Paris's (2012) concept of "flashpackers", an emerging sub-culture of independent travel tourism who are tech-savvy and relatively affluent.

Targeting young Chinese travelers will require a two pronged strategy for service provision. On the one hand, some travelers ("*Essentials*") require service adaptation as they would prefer Chinese speaking staff at hostels/hotels, destination information and restaurant menus available in Chinese, confirming previous studies on service provision to the Chinese outbound market (Hsu, Kang and Lam, 2006; Li, Lai, Harrill, Kline, and Wang, 2011; Wang, Vera and Tyler, 2008). On the other hand, the "*Low Personalizations*" segment requires no such adaptation, reinforcing the idea of a heterogeneous outbound market from China. A good starting point for service providers will be to understand services and facilities offered in hotels and restaurants in China (Li, Lai, Harrill, Kline, and Wang, 2011; Wang, Vera and

Tyler, 2008). Some countries (e.g., France and the UK) already provide tourism services in Chinese (Chan, 2006; Wang, Vera and Tyler, 2008), however, a more coordinated approach at the regional level (i.e. Western Europe) is necessary to ensure a quality experience for Chinese travelers, given their preference for multi-country itineraries (Euromonitor, 2011).

The results of this study can also assist destination marketers with planning marketing and communication strategies. Marketing activities emphasizing shopping as a significant tourist activity in Western Europe is unappealing to some segments (e.g., "*Essentials*" and "*Neutrals*"). This differs from other studies (Arlt, 2008; Hsu, Cai and Li, 2010) suggesting that the Chinese outbound market is primarily motivated by the quality of shopping activities. Hence, a more refined imaging and positioning of touring activities will be required for the young Chinese market based on the results of this study. Likewise, advertising and promotion campaigns solely focused on depicting either only group package or solo independent travel experiences may be unsuccessful with young travelers from China. They will relate better to ad campaigns showing some individuality within the comfort of group travel or the use of backpacker infrastructure by a small close-knit traveling group. Communication strategies should select media and on-line channels most appropriate to each segment. The "*Essentials*" are unlikely to rely on TV and radio advertising, the "*Exigent*" are unlikely to use travel forums and blogs, and the "*Low Personalization*" are unlikely to use guidebooks for planning their trip. Hence, unlike previous studies (e.g., Sparks and Pan, 2009) that found TV, fashion magazines, and travel books as the most used information sources to find travel-related information, our findings suggest that different segments have different preferences for collecting travel-related information. Given that the internet is used widely, destination marketers in Western Europe must monitor how the young Chinese market interacts with their reference groups, whether on-line or not, in collecting and disseminating travel-related information (Hsu, Kang and Lam, 2006).

Conclusion

The results of this study offer evidence of a heterogeneous young Chinese outbound market and suggest the emergence of an independent travel market to Western Europe among young travelers. Yet, the results presented are subject to several limitations. First, the use of a convenience sample of travelers impacts on the generalizability of the findings. Thus, the results are best used as a point of departure for other studies to empirically validate the propositions made. Second, the findings are derived from young travelers from one city only (Beijing). Replicating this study in other cities such as Shanghai and Guangzhou would be necessary to give more credence to an emerging young Chinese independent travel segment. Third, the methodology employed does not allow deeper cultural meanings affecting visitors' motivations and service preferences to be explored. Future studies can explore these using a qualitative methodology. Fourth, while the study implicitly assumes that potential Chinese travelers understand the difference between different types of accommodation, from hostels to four star-rated hotels, other studies (e.g. Hecht and Martin, 2006) argue the contrary. Hence, future research should seek a deeper understanding of the Chinese market's perceptions of different forms of accommodation and other supply-side considerations. Despite these limitations, the evidence provided in this study suggests that the tourism industry in Western Europe should be readying itself to welcome in the near future more diverse forms of travel by young Chinese travelers.

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Appendix A

Labels	Description
How important are the following motivations in influencing your choice to travel to Western Europe?	
a1	Interact with local people from Western Europe
a2	To feel free and independent
a3	To find thrills, excitement and adventure
a4	Visit destinations that others think are worth visiting
a5	Visit famous cultural and historical attractions
a6	Fulfil your curiosity about Western Europe

a7	Learn about the history and culture of Western Europe
a8	See some beautiful natural scenery
a9	Go shopping for Western European products unavailable or much too expensive in China
a10	Physically relaxing and resting during your travel

To what extent do you agree or disagree that Western Europe must offer the following facilities, amenities and services to Chinese visitors like yourself?

b1	Hotel/Hostel has a good reputation
b2	Clean kitchen, bedroom and bathroom
b3	Complimentary linen and towels
b4	Adequate facilities in room (e.g. kettle for hot water)
b5	Front-desk open 24 hours
b6	Internet facilities on site
b7	Close to tourist spots and amenities (e.g. transport)
b8	Restaurants serving Western food with Chinese menus
b9	Restaurants serving Western and Asian fusion food with Chinese menus
b10	Chinese speaking staff at hotel
b11	Hotel/Hostel and destination information available in Chinese
b12	Rail travel pass options
b13	Hop-on, hop-off coach pass options
b14	Affordable short-haul flights
b15	One-use toiletries
b16	Safety deposit boxes
b17	Same sex rooms

Appendix B.

Independent variables	Descriptions
Socio-demographics	
Gender	1= female; 0= male
Individual Monthly Income	1= individual monthly income less than RMB 3,000; 0 = otherwise
Marital Status	1 = Single; 0 = otherwise
Education level	1 = University degree and less; 0 = Post-graduate degree
Age	1 = 18 and 25 years old; 0 = 26 years old and over

Employment Status	1 = Full-time employee; 0 = student or not employed

Travel characteristics

Preferred Type of Accommodation	1= 3-5 star hotel; 0= otherwise (e.g., hostel, guest house)
Visitation Status to Western Europe	1= First-timer; 0= otherwise
Estimated Duration of the Next Trip to Western Europe	1= less than 2 weeks; 0= otherwise
Party Group of the Next Trip to Western Europe	1= Family or partner on the next trip; 0= otherwise

What will be the main purpose of your travel to Western Europe?

VFR	1= visiting friends & relatives; 0= otherwise
Study	1= study; 0= otherwise
Work	1= work; 0= otherwise
Holiday	1= holidays; 0= otherwise

What destinations are you most likely to visit?

UK	1= UK; 0= otherwise
Italy	1= Italy; 0= otherwise
Belgium	1= Belgium; 0= otherwise
Portugal	1= Portugal; 0= otherwise
France	1= France; 0= otherwise
Switzerland	1=Switzerland; 0= otherwise
Ireland	1= Ireland; 0= otherwise
Netherlands	1= Netherlands; 0= otherwise
Germany	1= Germany; 0= otherwise
Spain	1= Spain; 0= otherwise
Austria	1= Austria; 0= otherwise
Greece	1= Greece; 0= otherwise

What information source are you most likely to use to plan your trip to Western Europe?

TV or radio advertising	1= TV or radio advertising; 0= otherwise
Guidebook	1= Guidebook; 0= otherwise
Internet search engine	1= Internet search engine; 0= otherwise

Travel agency	1= Travel agency; 0= otherwise
Travel forums & blogs	1= Travel forums & blogs; 0= otherwise
Special magazine	1= Special magazine; 0= otherwise