Segmenting the Online Leisure Travel Booker

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Abstract— **There are different ways in which consumers have been segmented in the past. This study however, looks specifically at online consumers of leisure travel products. Spearman correlation analysis and the Kruskal-Wallis test revealed insights on the demographic data that are valuable for targeting leisure travelers in the online marketplace.**

Keywords-internet; leisure travel; online; segmentation

I. INTRODUCTION

For decades research has been done on segmentation in traditional markets [1]. Market segmentation has traditionally been accomplished using variables such as purchase and usage behavior, psychographics, demographics and geography. Even segmentation based on alternative methods such as lifetime value and long-term profitability yield some useful insights of consumers in these markets [1]. These approaches and combinations of methods may be pertinent in the Internet marketplace.

For example, segmentation using lifetime value of the customer could treat an online consumer as an asset worthy of identifying and targeting for special treatment just as much as an offline consumer. Likewise, alternative measures for segmenting (in an online context) can create multiple views of the same market [1].

Segmentation research on the travel industry specifically is also useful. Reference [2] studied Singapore consumers to find that light users of travel agents exhibited differences from heavy users. This volume segmentation of travelers shows that heavy users were more innovative and knowledgeable, more involved with vacation travel, and they were more likely to be opinion leaders.

Ref. [3] segmented travelers using an International Tourism Role (ITR) scale. Tourist roles are based on the degree to which tourists desire novelty or familiarity in their vacation [4]. The US travel market was segmented according to benefits realized and it is proposed that the best way to understand consumers' motivations for vacation travel or benefits sought from a vacation destination is to study consumers' past travel behavior [5].

However, marketers are beginning to consider the uniqueness of online markets and are conducting research specific to the new media. Ref. [6] segmented web shoppers, based on their purchase behavior across several product categories. They then profiled the segments along the twin dimensions of demographics and benefits sought to show that benefits sought can provide more diagnostic information than mere descriptive demographic profiling.

Two distinct profiles of Web travel buyers, rookies and veterans, were discovered [7] and questions remain about whether rookies differ from veterans on personal characteristics. Various types of profiles emerge in these sorts of studies. From these, consumers can be categorized in terms of those relying primarily on affective or cognitive systems to evaluate vacation options with the use of an Online Decision Aid (ODA). The cognitive oriented traveler prefers a utilitarian approach designed to save time and money, for instance. An affective oriented traveler, on the other hand, could be a value-expressive individual who will use an ODA to save their profile information and generate a personalized vacation. Another affective oriented traveler, the Hedonic type, may find enjoyment using an ODA for 'vacation shopping'. Researchers studied the needs of consumers in online travel communities and the driving factors for their participation in an online community [8]. Some of the constructs developed were hedonic needs including amusement, fun, enjoyment, entertainment, and functional needs including information, efficiency, and convenience. These needs constructs proved valid for assessing travel community member needs.

Thus, there are numerous ways in which online consumers of travel products could be segmented. Any of the above methods could be used or novel approaches resulting from this study might be useful. Ultimately, the best approach is the one that most accurately describes consumers and enables a marketer to direct effective marketing programs at heterogeneous groups of consumers.

II. THIS STUDY

A. Questionnaire

An online survey questionnaire was used to determine how various factors affect travel planning and purchasing decisions. A total of 1300 respondents completed surveys. One hundred and two surveys were deleted, as responses were not complete. The survey was pre-tested after 250 surveys were collected.

Research questions of a demographic nature included what significant differences exist in terms of age, gender, education, occupation, or family income of those consumers who do and do not purchase leisure travel online?

In the dataset, females represented the largest gender of respondents, 63% compared to 37%. Family income was quite evenly distributed. The dominant age groups were between 26 and 55 years of age. Almost 90% of respondents had a level of education beyond high school and the largest

category had completed trade school, college, or a university degree.

B. Statistical Tests

Spearman correlation analysis and the Kruskal-Wallis test using SPSS 17.0 revealed insights on the demographic data that are useful for segmentation purposes. Demographic dimensions could be combined with other variables to target leisure travelers for marketing purposes [9]. Patterns of relationship between demographic variables and research variables are always of interest to marketers.

Relationships between age, education level, household income, gender and key variables are examined below.

C. Hypotheses

The following are the relevant hypotheses tested.
H1. Age is negatively related to intention to book leisure travel through the Internet.
H2. Level of education is positively related to intention to book travel through the Internet.
H3. Level of household income is positively related to intention to book travel through the Internet.
H4. Gender and purchase behavior are independent of each other.

III. AGE AND ONLINE BOOKING INTENTION

H1   Age is negatively related to intention to book travel through the Internet.

The relationship between age and online travel booking intention was investigated using Spearman's Rank Order Correlation. Age is negatively associated with intention to book travel through Internet but this association is negligible, rho = -0.0286, n = 1142. The hypothesis of independence cannot be rejected as the p-value = 0.3350 > 0.05. To check if rho is significantly less than zero, we divide the p-value by 2. So for a one tail test (left tail) the p-value = 0.1675. This means there is no significant negative relationship between age and intention to book travel online. Therefore, hypothesis H_1 is not supported.

Categories of online booking intention were merged so that three remain, 1 = highly likely, 2 = likely, and 3 = somewhat likely. A Kruskal-Wallis test revealed there was a statistically significant difference in online booking intention levels across different age categories: under 18, n = 1: 18 to 25, n = 137: 26 to 35, n = 294: 36 to 45, n = 302: 46 to 55, n = 270: 56 to 65, n = 119: 66 to 70, n = 11: over 70, n = 8), χ^2 (7, n = 1142) = 15.591, p = 0.029. The oldest age level recorded a higher median score (Md = 3) than any other age level category, indicating a 'somewhat likely' intent to book online. A negative relationship between age and booking intention was anticipated. Spearman's correlation confirms such a relationship even though it is not statistically significant.

Fig. 1 plots the mean scores of online travel booking intention, and age graphically using all eight categories of age. In the levels of online travel booking intention a score of 1 means 'highly likely' and higher scores mean less likely. A sigmoidal or S-shaped relationship is clearly evident with

females who represented the largest number of survey respondents. This pattern will influence the data that Spearman's correlation uses in its calculation. Intention to book travel online decreases beyond the age of 65 for both males and females.

IV. LEVEL OF EDUCATION AND ONLINE BOOKING INTENTION

H2   Level of education is positively related to intention to book travel through the Internet.

The relationship between education and online booking intention was studied using Spearman's correlation. Education level is negatively associated with intention to book travel through the Internet, rho = -0.1703, n = 1140. The hypothesis of independence is rejected since the p-value = 0.0000 < 0.05. Since the Spearman's rho is -0.1703, it is significantly less than zero as the p-value for a left tail test will be less than the 0.05 level of significance. This means there is a significant negative relationship between level of education and intention to book travel online. Hypothesis H_2 is not supported.

Categories of online booking intention were collapsed so that three remain, 1 = highly likely, 2 = likely, and 3 = somewhat likely. A Kruskal-Wallis test revealed there was a statistically significant difference in online booking intention levels across different education categories (some grammar school, n = 2: completed grammar school, n = 3: some high school, n = 22: completed high school, n = 105: some trade school, college, or university, n = 266: completed trade school, college, or university degree, n = 545: graduate studies or masters degree, n = 147: post graduate studies or advanced PhD degree, n = 50), χ^2(7, n = 1140) = 40.522, p = 0.000. The education level groups who have completed trade school, college, university and higher level qualifications recorded a lower median score (Md = 1) than any other education level category, indicating 'highly likely' intent to book online. This seems to contradict Spearman's test results of hypothesis H_2.

Fig. 2 plots the mean scores of online travel booking intention, as well as education graphically using eight category levels of education. A positive relationship is seen where booking intention increases with rising education levels. This supports the Kruskal-Wallis test results.

V. HOUSEHOLD INCOME AND ONLINE BOOKING INTENTION

H3   Level of household income is positively related to intention to book travel through the Internet.

Spearman's correlation was employed to evaluate the relationship between household income and online travel booking intention. Household income is negatively associated with intention to book travel online, rho = -0.1340, n = 1138. The hypothesis of independence is rejected as the p-value = 0.0000 < 0.05. Because Spearman's rho is -0.1340, it is significantly less than zero as the p-value for a left tail test will be less than 0.05. This means there is a significant negative relationship between level of household income and

intention to book travel through the Internet. Hypothesis H_3 is not supported.

Categories of online booking intention were collapsed so that three remain, 1 = highly likely, 2 = likely, and 3 = somewhat likely. The Kruskal-Wallis test conducted with the demographic of income and online booking intention revealed a statistically significant difference in online booking intention levels across different income groups (under $25,000, n = 50: $25,000 to $49,999, n = 165: $50,000 to $74,999, n = 227: $75,000 to $99,999, n = 183: $100,000 to $149,999, n = 222: $150,000 or more, n = 141: prefer not to answer, n = 150), χ^2 (6, n = 1138) = 44.622, p = 0.000. The income group under $25,000 recorded a higher median score (Md = 3) than any other income group, indicating a 'somewhat likely' intent to book online, whereas, the higher income groups recorded a median score (Md = 1) indicating 'highly likely' intent. Mid-level income groups ($25,000 - $74,999) had a median score (Md = 2) showing a 'likely' intent to book online. These results were anticipated but they are not confirmed in hypothesis test H_3. Even though Kruskal-Wallis suggests there is a statistically significant difference in online booking intention levels across different income groups, Spearman's Rank Correlation shows there is a significant negative or opposite relationship between level of household income and intention to book travel through the Internet so that hypothesis H_3 was not supported.

Fig. 3 plots the mean scores of online travel booking intention, as well as the seven categories of income. A curvilinear relationship is clearly evident. Online travel booking intention becomes more likely with increasing annual household income until the income category of $100,000 to $149,999, and then the likelihood intent to book online reverses sharply. This could easily explain the conflicting results of Spearman's and the Kruskal-Wallis test.

VI. GENDER AND ONLINE BOOKING INTENTION

H4   Gender and purchase behavior are independent of each other.

The relationship between gender and online travel booking intention was investigated using Spearman's Rank Order Correlation. Gender and purchase behavior are independent of each other, rho is 0.0366, n = 1130. The hypothesis H_4 is not rejected since the p-value = 0.2185 > 0.05.

Categories of online booking intention were collapsed so that three remain, 1 = highly likely, 2 = likely, and 3 = somewhat likely. A Kruskal-Wallis test was conducted with the demographic of gender and online booking intention and it revealed no statistically significant difference in online booking intention levels across gender, thus confirming the Spearman's correlation analysis.

VII. DATA ANALYSIS

The results of Spearman's Rank Order Correlation hypothesis tests H_1, H_2, and H_3 are rather puzzling when these results are compared with Kruskal-Wallis tests for most

demographic variables. However, there may be reasonable explanations for this that the charts below imply.

It is natural to assume consumers who book travel online are younger and have a higher education and income. However, there appear to be demographic parameters within which marketers should focus their efforts. Higher income people may not book online as often as marketers believe. Wealthy people may feel their time is too valuable to spend hunting around the Internet for travel deals and so they call a travel agent and are willing to pay them for their effort. Fig. 3 suggests marketers should target people in a family income range no higher than between $100,000 to $149,999. It could be that above this range people call a travel agent. Since income and education are correlated, there could be an education level ceiling above which marketers should not target also. In this study, Spearman's correlation between education level and income is positive, rho = 0.1263, n = 1143, p-value = 0.0000 < 0.05. Fig. 4 plots education level and the mean number of leisure trips taken in the past year. The number of trips forms a plateau at an intermediate education level - some trade school, college or university, and at the post-graduate studies level, the mean number of leisure trips decreases. Highly educated people could be time-starved and have less leisure time; as a result, they take fewer vacations and they may also want an agent to arrange their trip rather than spending time online. Fig. 1 suggests online travel marketers should target both male and female consumers up to the age of 65. Non-bookers tend to be those aged 65 plus years and have a less 'wired' lifestyle. Perhaps older respondents are less likely to book online as the Internet is overwhelming to them so they rather call a travel agent.

Lastly, the questionnaire operationalized travel website usage with a single item asking, "How often do you visit a travel website to research or book a leisure travel product?" This is a similar volume segmentation variable as outlined in a study where researchers investigated travel agency usage [2]. Such volume segmentation may be meaningful in travel website usage especially when used in combination with key psychographic and demographic variables. Fig. 5 graphs education level and the mean number of times a respondent visited a travel website to research or book a travel product. There appears to be a gender difference at the higher education levels. When age and the mean number of times visited a travel website are plotted, above the age range of 56-65 there is also a gender difference in mean number of website visits.

VIII. CONCLUSIONS AND MANAGERIAL IMPLICATIONS

Demographics are likely to play an important role in predicting online behavior just as it does in traditional marketplaces. For instance, in a recent study respondents with school aged children found travel websites often unable to provide the information needed or allow booking to accommodate a family [9]. The requirement for multiple seats often means fewer flight options could be found online, for example. Using bed and breakfast establishments are

desirable as they provide a home atmosphere that is more personal and secure when traveling with children than afforded by typical hotel facilities. As a result, travel agents are consulted to locate B & B's and flights when traveling with family members.

Managers must be aware of the demographic and other predictors of future online travel purchase intention. Demographic variables of income and education could be useful bases for segmentation. Online leisure travel marketers should target both male and female consumers up to the age of 65, those with a family income no higher than the range of $100,000 to $149,999, and those generally having higher education levels. In addition, Ref. [9] suggests using combined approaches of segmentation as the best way to identify and target online consumers of leisure travel products. This is because demographics as well as motivations, prior experience with the Internet, and other variables influence online booking intention of leisure travel products. Another researcher, using travel agencies, found that populations, segmented by usage, are different in both their identifiable psychographic and demographic characteristics [2].

Furthermore, there appears to be relevant industry-specific usage patterns so that segmentation by usage may vary from one industry to another. Research from Forrester and comScore for example, reveal that visitors to car websites behave differently than visitors to other e-commerce sites [10].

Thus, the travel sector, which has unique characteristics of its own, warrants continued examination by researchers since these attributes could impact usage. Segmentation approaches outlined in this article could help marketers identify and target online leisure travel bookers in this important industry.

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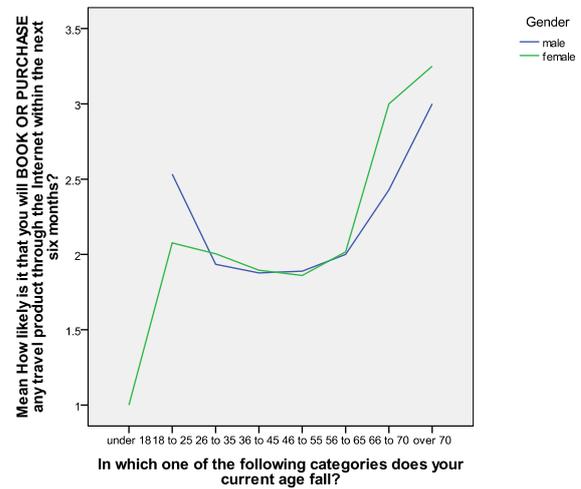
DEMOGRAPHIC ANALYSIS CHARTS

Figure 1.   Age and Mean Scores of Online Travel Booking Intention
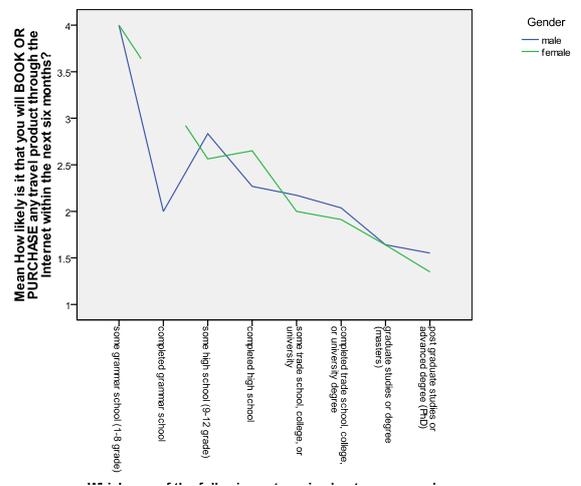

Figure 2.   Education and Mean Scores of Online Travel Booking Intention
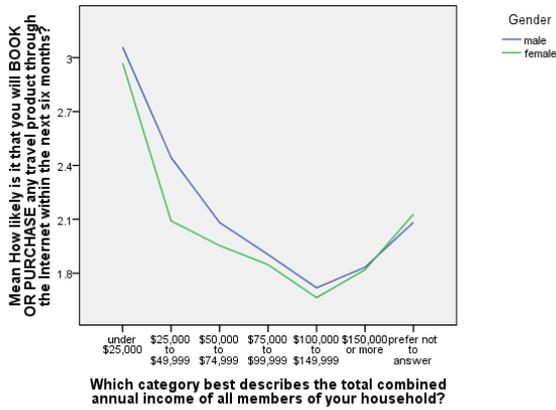
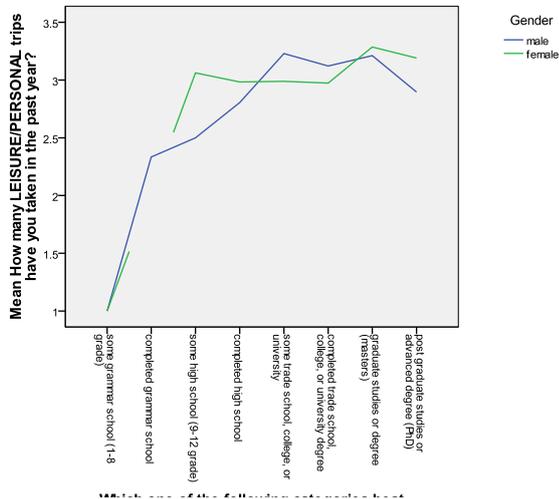Figure 3.   Income and Mean Scores of Online Travel Booking Intention

Figure 4.   Education Level and Mean Number Leisure Trips Taken in Past Year
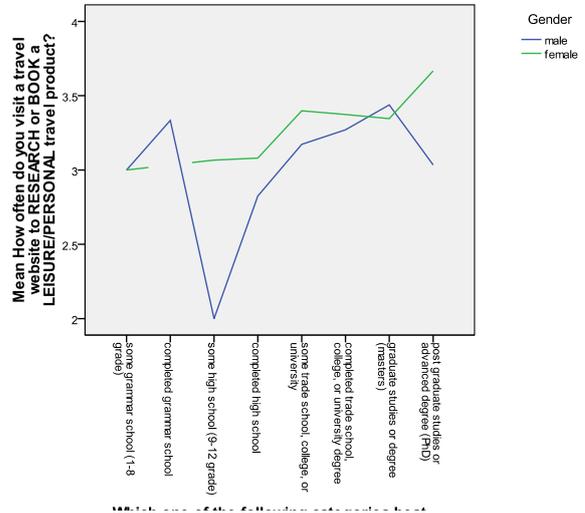

Figure 5.   Education Level and Mean Number of Times Visiting a Travel Website

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