

Consumer Preference Study:
Consumer willingness-to-pay for hotel room amenities

by

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ABSTRACT

Hotel amenities and their influence on consumer choice have been extensively studied by academics. These have largely focused on consumer preferences vacation modes and the psychographic characteristics of travelers. Revenue managers make practical use of this information by attempting to match available hotel rooms with traveler demands for accommodations, setting prices that maximize profits for the hospitality company. The experienced revenue manager is able to determine the most profitable price schedule for a room types across many distribution channels. This study was conducted to test the use of choice modeling for objectively assessing dollar values of three basic amenities for consumers (room type, kitchen availability and price). Researcher used paired comparisons modeled as a conditional logit. This study used market segmentation and choice modeling to determine the value of amenities for an aggregate group and 16 more homogenous groups. Market segmentation and choice modeling allowed this study to segment markets into more homogenous groups, and by doing that allowed for calculation of customer willingness to pay for additional amenities. Results from this study confirm that customers are willing to pay for kitchen \$65.43 on top of their room value. All responders generally agree to liking an extra bedroom in their hotel room and they are willing to pay \$37.39 more than for a studio room. A surprising result is that it seems based on the results that responders generally do not like to have a second bedroom and they are not willing to pay for it. By knowing customer willingness to pay, it can be assured that customers always feel they are getting a high value out of the transaction and increase the likelihood of future transactions. The

significance of this research is the concrete numbers that can be, and already have been, applied immediately in the hospitality industry, and is positively impacting business revenue and customer experience.

DEDICATION

To my family: without their support, this would not be possible, or as important.

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CHAPTER 1

INTRODUCTION

1. Revenue Management

Currently in the hospitality industry, a major issue that is critical to organizations' success is revenue management. Revenue management is concerned with creating and managing room prices to maximize revenue and is critical to organizational success. For the business to succeed, it has to have the best price for products and services. At the same time, it has to face the competition offering similar products and services (Hayes & Miller, 2011). According to Kimes and McGuire (2001), revenue management is "setting prices according to predicted demand levels so that price sensitive customers who are willing to purchase at off-peak times can do so at favorable prices, while price insensitive customers who want to purchase at peak times will be able to do so," (p. 34). Customers can be divided into segments depending on which distribution channel they use to book their hotel rate. Examples include: business travelers, transient or leisure, SMERF (Social, Military, Education, Religion and Fraternity) Groups, corporate travelers, Online Travel Agencies (OTA's), opaque travelers (not visible rates such as Hotwire and Priceline), or packaging (flight and room rate together, or hotel and car rental). Depending on the season and the type of property, business guests will pay higher prices for rooms during the week, while leisure guests will pay higher prices for a weekend because those are the peak times for those travelers. At the same time, leisure guests are expecting to pay less during the week, and business travelers are expecting to pay less for a room on a weekend because they are off-hours. Smart revenue managers will fill the

hotel first with high prices for corporate guests and then have a few rooms available at lower rates for leisure travelers. In both cases, if the travelers are informed buyers, they will be more likely and willing to repeat the trade. Business guests will expect high prices and be willing to pay. At the same time, leisure guests will expect high value for the room on a weekend and will expect lower prices during the week. Revenue managers are not always able to have a perfect sell out (100% occupancy), nor should they; but they are able to calculate the number of rooms that they should offer to specific segments, and at specific prices, to maximize profits.

Revenue management in the hospitality industry developed after it was already a tested technology in the airline industry. It should not be approached the same way in the hospitality industry however. There are too many unaccounted factors, such as customer length of stay, more people able to stay in the same room, and additional amenities available for purchase, such as amenities in the room and access as a resort guest, when the hospitality industry is analyzed (Tranter, Stuart-Hill, and Parker, 2009). Length of stay refers to the number of days the guest stays at the hotel. This is important because the housekeeping expenses vary, based on if the guest is staying only one night – in which case the full cleaning fee ranging from \$90 a day is deducted from the room cost – or if the guest stays a couple a days – when there would be limited cleaning provided, which can range from \$30 to \$45 depending on the room size (Shell Vacation Hospitality, 2013). This fee is not applied to a guest; but to calculate net revenue, it is deducted internally. That is why sometimes selling the room low for a one-night stay is not good business. Another difference in the hotel industry compared to the airline

industry, especially in the United States, is little to no variance in room cost based on number of people sleeping in the room. When buying a plane ticket, the price only applies to one person, unlike a hotel room where there is no difference in price if one person, or four, stay in a room. The third difference is amenities available for purchase. Airlines are now adding more amenities such as Wi-Fi and priority seating, but they are nowhere near the number of amenities available to a hotel guest, such as: access to the spa, pools, a fitness center, or in-room dining.

In 2012 Wyndham Vacation Rentals conducted research by testing what guests think are the most important reasons to book a room in their resorts. These results were used to better market their rooms to future time-share owners, by explaining that their rooms have features that families on vacation want, such as: value for the price (62%), kitchen (61%), and extra space (57%) (PhoCusWright, 2012). Expanding on Wyndham's findings, this research will deal with those three top features and break down a price that customers are willing to pay for them by using a trade-off between each amenity and price. By the end of the study, the aim is that calculating guest willingness to pay per amenity would lead to broadcasting rates and breaking down the cost of a hotel room, which would result in: increased public accountability, transparency, and aid with raising customer trust in the organization (Nyaupane, Graefe, and Burns, 2009). Additionally, by using knowledge gained from Nyaupane, Graefe, and Burns (2009), revenue managers would move away from the tradition of bundling rooms' amenities, transportation, and activities, which hinder guests from distinguishing the cost of each individual item. The idea behind packaging is that we do not want to dilute the room price of a brand name.

While a four-star hotel in Arizona has a room priced in summer at low one hundreds, in February the same room costs high three hundreds. By packaging that room, revenue managers are able to offer it for far below one hundred a night and still make a profit. The consumer is not aware of how low the rate is because they are purchasing it together with the airfare. Additionally, for brand purposes, it would be very hard to sell the same room four months later in the high 300s, if the consumer knows that last time he/she got it for less than a hundred (Westin Kierland, 2013). If this approach is used, then revenue managers can raise prices in the winter during the peak season (Hopper, 2013). It may seem that by packaging, guests perceive a good value, and revenue managers gain higher profits and preserve a hotel's image, but in the long-term it is neither sustainable, nor a goal, if we are looking for the lifetime loyalty of a consumer (Nyaupane, Graefe, and Burns, 2009). That is why Dacko's (2004) article has significant value. He focuses on approaches of last-minute marketing and a need to develop and maintain the quality of the experience and a pricing policy that is consistent with the company's marketing strategy and reputation. Dacko's main point aims for ways that can provide the best price before the hospitality product expires, without sacrificing the company's brand.

2. Current Revenue Management Practices

Hotel amenities and their influence on consumer choice are topics that have been extensively studied and utilized by revenue managers. As will be detailed later, Tussyadiah, Kono, and Morisugi (2006) focus on consumer preferences in packaged tours, Park and Petrick (2010) focus on non-customers, Sheldon and Mak (1987) focus on

vacation mode, and Zins (1998) focuses on psychographic tools in tourism behavior models. Additional research has been based on consumers' preferences towards theme hotels, attached amenities such as convention centers, and hotels nearest to the airport (Crouch and Louviere, 2004).

In contrast, in the field, the current revenue management system focuses on the revenue manager's experience, room type, lead time (how many days in advance the rooms are reserved), competition prices, and the distribution channels available, to determine what the pricing for a standard hotel room per night will be (Demirciftci, Cobanoglu, Beldona and Cummings, 2010). It is important to mention that organizations are more interested into revenue maximizations than profit maximization. There is more profit available if there is no kitchen included since price per one meal in hotel restaurant is more expensive than revenue gained from kitchen per day. In the future, it would be recommended to focus on what is the best option for the company all together then just on departmental goals. Furthermore, according to Hopper (2013), in most of the resorts across the country, revenue managers offer the same price for a studio and a one-bedroom. Even on social media sites there is no recognition of differences between such studios and one-bedrooms, so most of the time, depending on the hotel, the customers will pay for a studio but will get a one-bedroom (Groupon, 2013; Living Social, 2013). (In this case, studio refers to a standard hotel room, while a one-bedroom has an additional bedroom attached to a standard room with the possibility of closing the door.) This creates confusion with revenue managers because they are not sure how to price these types of rooms in the future as customers get used to getting a bigger room while

paying less. Also, the customers become dependent on the deals so they do not want to pay the full price anymore, and they become dependent on e-wholesalers such as Groupon or Living Social (Myung, Li, and Bai, 2009). The study performed by Lee, Bai, and Murphy (2012) determines that females and consumers with less education tend to demonstrate higher involvement in getting a discount. Based on this, the idea is if the customers pay the right price, which is calculated by their willingness to pay, then they would not be as dependent on hot deals.

In the current industry, customers are not really segmented apart from what distribution channel they use. As mentioned before, depending on the distribution channel through which the customer books the hotel room, the appropriate discount is applied. As business customers, guests can get the best available rate that is published on the website, or their corporation may have a specific contract with the organization which determines the rate or applies discounts from the best available rate. As leisure travelers, customers can get the best available rate; or, depending on if they belong to certain organizations such as AAA, there is an automatic 10% discount applied to the best available rate. In situations where the same person is acting as a dual customer (business person traveling for a conference, and bringing along his family for a vacation), it is very hard to distinguish between those customers. At a certain point the customer's organization is paying for a hotel room, so he/she is paying a corporate rate, but the next time he is just coming with the family and he is paying the best available rate. Just because a person is booking a room through different channels, it is still the same person and his/her willingness to pay should be the same. And that is what current revenue

management practices are lacking. As mentioned, the transaction between customer and organization should go as smoothly as possible so that customer would be willing and “highly likely” to repeat this transaction in the future, getting that organization customer loyalty (Hayes and Miller, 2011). If there are discrepancies between rates for the same person visiting, then future business is not encouraged on one of those two rates, in this case the leisure rate because the customer will pay more per night by at least 10% for a leisure rate compared to a corporate rate.

3. Purpose of the study

That is why the aspiration of this study is to have objective revenue management, so there are logical components as to why the hotel room is priced the way it is. So far, none of the researchers focus on finding the dollar amount that the particular demographic is willing to pay for a kitchen or a specific room type. They especially do not consider which stage of life consumers are in, which identifies different needs when reserving a hotel room (Reid and Bojancic, 2010). From practice, it is known that although hotels are already built with a certain number of rooms inside, every room can be priced differently based on what amenities are included in a room and which distribution channel a reservation is made in. The purpose of this study is to examine overall customer preferences for hotel amenities, such as the difference in value between more space and a kitchen, compared to a studio, and calculate the amount of dollars that guests belonging to different demographics are willing to pay for specific hotel amenities. Finally, rates would be determined based on customer willingness to pay, depending on

the amenities required and which season it is, and not just by belonging to specific distribution channels.

4. Importance of the Study

This study is important to all the stakeholders. It will help revenue managers objectively determine the price of the type of room, and if it has a kitchen. The study will promote accountability and transparency between customers and organizations because guests will know that they are paying a fair price for their room based on their willingness to pay. They will not feel cheated and in constant worry if they are paying much more than the value of the room, which will lead to loyalty. Similarly, this study is important for the hotel management company because it will not lose revenue when providing amenities that the guests do not even want. This study will also help revenue managers determine the difference of the customers' willingness to pay in dollar amounts for a studio, a one-bedroom, and a two-bedroom at the hotel. Revenue managers will know the dollar value of the kitchen for the customer. Overall, this study will benefit all stakeholders because it provides objective data that can be used for future planning.

CHAPTER 2

LITERATURE REVIEW

1. Segmentation and its Relation to Revenue Management

Market segmentation is the most fundamental concept of modern marketing (Wind, 1978. p. 317). In this research, market segmentation will be used to determine the value of different room attributes amongst different, more homogenous segments. Market segmentation is considered as “viewing a heterogenous market as a number of smaller homogenous markets, in response to differing preferences, attributable to the desires of customers to more precise satisfactions of their varying wants” (Smith, 1956, p. 5).

Market segmentation “allows the organization to target specific segments that are much more likely to patronize the organization’s facilities” (Reid and Bojanic, p.128). According to Dolnicar (2008), by realizing exact segments that stay at the resort, revenue managers should be able to decrease competition from the global market to tourism destinations that specialize on the same segment (p.130). This will improve focus on the product in a specific way, rather than trying to provide everything at a high cost. Revenue managers will be able to develop an effective marketing message and communicate it through the most effective channel for that segment. Finally, by attracting the right customers to their destination that suits their specific needs, customers will be more likely to be more satisfied with their stay. The consequence of that is that they would more likely revisit and spread positive word of mouth to their friends and family about their vacation.

According to Reid and Bojanic (2008), there are certain criteria that need to be satisfied to know the amount of market segmentation that is necessary to make the segment profitable (p. 129). The first criterion is substantiality. Under this criterion, the market segment must be large enough to warrant special attention to meet the needs of the segment and achieve the market objectives of the firm. The second criterion is measurability (Reid & Bojanic, 2008, p. 129). It should be assessed from two perspectives. One is overall size of the target market and the second is projected total demand of purchasing power of the target market. The third criterion is accessibility (Reid & Bojanic, 2008, p. 129). It recommends that the large target markets must be accessible through a variety of marketing efforts (Reid & Bojanic, 2008, p. 129). The fourth criterion is actionability, which recommends that the consumers in the same market should react similarly to the marketing program used to target them (Reid & Bojanic, 2008, p.130). Reid and Bojanic (2008) explain that by identifying markets with heavy users of company's products and services, the company can focus their marketing attention to customers and save marketing resources on segments that receive little or no attention, so marketing resources are not wasted chasing markets with little potential.

When all of these criteria are satisfied, market researchers can choose the appropriate variable for their market segmentation. The following are five basic types of variables for segmenting consumer markets: geographic, demographic, psychographic, behavioral and benefits (Reid & Bojanic, 2008). All of these variables can be used on their own or combined. It all depends on the level of segmentation that a marketer wants. Geographic segmentation focuses on the consumer's geographic area of residence (Reid

& Bojanic, 2008, p.130). Demographic segmentation focuses on demographics such as income, age, gender, and ethnicity. Psychographic refers to segmentation based on lifestyles, attitudes, and personalities. Behavioral segmentation focuses on the behaviors that consumers exhibit in the marketplace. Lastly, benefit segmentation focuses on benefits that consumers seek when they purchase a product (Reid & Bojanic, 2008, p.130). This means that if consumers of a certain age tend to utilize a kitchen while on vacation, the company can tailor an ad campaign highlighting the kitchen as a main amenity.

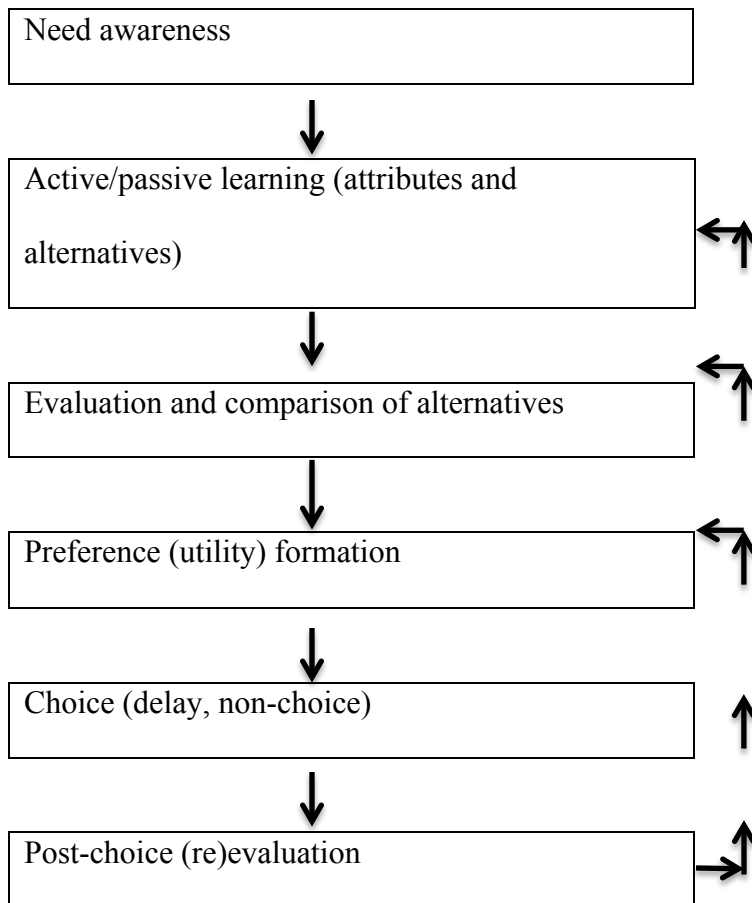
2. Choice Modeling and its Effects on Profits

Choice Modeling combines the consumer's preferences and discrete-choice models to predict choices, and place monetary (and non-monetary) values on specific attributes that explain choices. The main interest of choice modeling is a decision-making process, and it is broad in practice. To be able to understand Choice Modeling Technique (Table 1.), the process starts with what every consumer goes through to make a decision to solve his/her needs (Hensher, Louviere & Swait, 2000). First of all, the consumer becomes aware of his/her needs. As soon as that happens, there is a period of information search. During information search, the consumer looks for the products that can satisfy his/her needs. Additionally, during that time the consumer forms beliefs about which products are available to fulfill his/her needs, such as which product attributes are relevant to their choice. Eventually, consumers become informed about the product and they form evaluation criteria known as a utility function, which involves trade-offs

between product attributes that matter in the decision. When deciding, trade-offs for consumers can be structural constraints, and can include other considerations that can influence their decisions to purchase, and what to purchase, or even not to purchase regarding a particular product. Satisfying their consumer needs, because the benefits outweigh the costs is the goal.

Table 1.

Overview of the consumer's choice process (Table is adapted from the book Stated Choice Methods, Hensher, Louviere & Swait, 2000).



The choice model that will be use in this research is known as the conditional logit (logit as a logarithmic) model. It is the popular choice-modeling framework, and according to Hensher, Louviere and Swait (2000), it is useful for many reasons. First, it is very simple for customers to choose between two choices. Second, the estimated parameters are unique (there is only one set of globally optimal parameters), so it allows for simplicity in estimation. Third, the model's closed-form specification makes it easy to change scenarios, which enables easy implementation of predictive test without having to perform complex evaluation of integrals. Fourth, the speed of delivering acceptable models on the accepted test of model performance is high.

Choice modeling has a number of applications that directly impact business revenue. One of the directions of choice modeling and revenue management is used in the departments of transportation and tourism. In the article by Tyrrell and Devitt (1999), choice modeling is used to calculate the economic impacts of changes in seven types of scenic byways characteristics. By using the binominal logit model the authors estimate every change in any of those seven characteristics and the influence it would have on a dollar value. Researchers found out rest stops without restrooms were negative in value for responders, which meant that people wanted to be paid for stopping at the rest stops without restrooms. A few years later, Tyrrell and Johnston (2003) assess expenditure changes associated with welcome center visits and their effectiveness. The result of the study was that the welcome centers generated \$35 in new tourism expenditures for every dollar of the operation budget.

The second broad application of revenue management and choice modeling is

found in commerce. In that example, Lin and Sibdari (2009) focused their research on dynamic pricing. They developed a model to describe real dynamic price competition between firms that sell similar products. Based on their model, Lin and Sibdari came up with these results: when a chance of a sell out is small, both of the companies would use optimal prices and they would maximize revenue (2009). If one company wants to hurt another, then they would have to substantially lower the price. Likewise, additional application of choice modeling and dynamic pricing is shown in research from Suh and Aydin (2011). They used the multinomial logit choice model to test flexibility in pricing. The results of their study show that the marginal value of an item may increase if the remaining time to sell the product decreases or if the total inventory of the item grows. By using choice modeling in a business, there are positive impacts on organizational revenue.

3. Market Segmentation and Choice Modeling

From the overview of the theory, market segmentation helps with clustering customers into categories and choice modeling combines consumers' preferences and discrete-choice models to predict customers' choices, and place monetary values on specific attributes that explain choices. In this section, choice modeling is used with market segmentation to assist with pricing. The benefit of choice modeling and market segmentation in this research is that it can give an exact dollar value of each amenity and apply it to a specific, more homogenous group.

One of the areas where choice modeling is used is in explaining travelers'

behaviors. One of the articles that uses the choice modeling is from Sheldon and Mak (1987). The choice model explains a traveler's choice of vacation mode. By using various choice options, the authors offer the consumers an option between inclusive package tours, independent travel, and travel on a basic package tour. To evaluate the data, they use logit analysis. The study indicates that people who bought package tours shared few characteristics: they are more likely to be elderly, they are planning to visit more destinations, they are traveling alone or in groups of a few people, they focus on a short trip, and mostly they are first-time visitors to a destination.

Similarly, the second article that predicts travelers' behaviors is from Park and Petrick (2010). The authors develop a model for understanding the background of non-choice behavior of current non-customers and their goal was "to argue that exploring current non-customers might yield new opportunities that can be sustained, instead of competing for the same market" (Park & Petrick, 2010). They use knowledge of non-customers to assist tourism businesses and destination managers in developing markets in an innovative way. The model for this study is based on models of destination image and choice, goal-directed behaviors and leisure constraints that help understand current and non-customers. This model tests current and non-customers of the cruise industry. The research concludes that studies on non-customers should not be limited to examining constraints because the constraints might not be the reason for non-consumers to not purchase vacations.

The third area in which choice modeling is used is in estimating customers' preferences of attributes, and its impacts on overall results for venue or travel mode. In

the article by Crouch and Louviere (2004), the choice model was used to determine the factors of how a site for the convention is chosen from many alternatives. By using choice modeling, the study is able to acquire statistical data that shows what attributes influence the choice of a convention site. The result is that apart from the convention facility and accommodation factors, the destination has to offer additional attributes to be able to compete effectively. An article by Baltas (2006) explains how choice modeling is used in travel research to indicate the travel mode choices that differ in their attributes of cost, comfort, safety and travel time. Depending on which attributes the participant selected, different travel modes ended up as the best fit.

In the article by Zins (1998), choice modeling and market segmentation help the author examine the relationship between hotel theme choice and psychographic variables (personal values, lifestyle, vacation style, and benefits). In the study, the author looks for the link between consumer behaviors and the hotel they choose. Zins (1998) deduces that hotels with a focus on special activity such as tennis, golf, and children place more importance on personal values and lifestyle components when marketing their products. The conclusion of the study is that the hotel theme choice does not follow the same rules in every case. Moreover, in the article by Tussyadiah, Kono, and Morisugi (2006), choice modeling and market segmentation explain that packages of multiple destinations can create preferable combinations of features for certain travelers that share similar characteristics. The model can assist tour operators in offering practical guidelines for combining destinations into travel packages. Additionally, this model allows researchers to predict future travel patterns.

4. Gap in Research

In past research, although choice modeling has been popular, there has not been any application of it with focuses on demographic segmentation and their willingness to pay for hotel amenities. There are a lot of studies that use pricing strategies in revenue management but none of them are used to calculate the value of hotel amenities with choice modeling. In this study, the gap will be fulfilled with the choice modeling that combines consumers' preferences and discrete-choice models that predict choices of a particular market segment, and with it the exact monetary value (pricing) to every attribute that the consumer chooses will become known. This way, based on objective data, how much a kitchen and studio, one-bedroom, and two-bedroom should be priced per night will be calculated exactly. Consequently, the focus of this research is on tourists who come to resorts. Because people have different pictures of their ideal resort vacation, market segmentation will be the strategic tool to account for heterogeneity among them. For this research's purpose, using demographic market segmentation 10,000 responders will be divided into four more homogenous categories based on their age. Additionally, those four categories will be further segmented based on benefit segmentation and their preference of travel companions. At the end, there will be 16 more homogenous markets, which includes members similar to each other in terms of age and their choice of traveling companion, and dissimilar to members of other segments, and each of them will provide their exact dollar amount in terms of willingness to pay for a kitchen, and extra space/bedroom. Because different people are willing to pay different prices for certain

amenities, by using market segmentation and clustering people in 16 categories, based on their age and choice of their travel companion, researchers will find their preferences based on the market segment they belong to. After this organization demographic is segmented, researchers will be able to offer different product-service mixes to meet the needs of different segments. By applying the results of this research to the marketing of a resort, the researchers' end goal will lead to strengthening the company's competitive advantage, which will improve sales and profit of a resort. Based on this gap research objective are:

Objective 1.

Explore aggregate customer preferences for hotel amenities, a baseline model.

Objective 2.

Explore how customer preferences differ among the 16 different demographic segments.

Objective 3.

Calculate customer willingness to pay dollar values for different amenities among the entire sample and for the 16 different demographic segments.

CHAPTER 4

METHODS

1. Questionnaire Design

Questionnaires were sent directly to the organization's distribution list. In the email that was sent to distribution list, subscribers were directed with the link to website, where the survey was hosted. At the beginning of the questionnaire, there were three general questions: gender, age, and with who do you usually travel. This helped hypothesize differences between consumer choices. Subscribers were able to fill out the survey and submit it from website. The questionnaire was analyzed in sum as a baseline model and additionally in 16 categories based on age demographic and the companion they travel with. The first category was people ages 21-34 who travel solo. The procedure for sampling individuals was a census of email addresses from the hospitality organization and it was the responder's choice to answer the questionnaire. Each responder got a 20% discount on their future stay at any property of the organization.

In the data collection instrument, there were eleven questions. In this study, the research was performed based on hypothetical questions but with realistic choices. The survey purposefully had a small amount of questions so that people would answer the questionnaire.

2. Choice Set Design

As a basis for designing choice sets, a 2012, Wyndham Vacation Rentals a research studying which they tested customers' opinions on what their most important

preferences were while choosing a room in resorts as re-examined. These results were used to improve marketing of rooms to future time-share owners, by explaining that their rooms have features that families on vacation want, such as value for the price (62%), kitchen (61%), and extra space (57%) (PhoCusWright, 2012). Following on from that, this research deals with those three top features and breaks down a price that customers were willing to pay for them by using a trade-off between each amenity and the price. The independent variables for the binomial model were the hotel room (studio, one-bedroom, or two-bedroom), the kitchen (included or not) and the price in increments of \$50 (\$100, \$150, or \$200). The dependent variable was choice. The relative impacts of price and room features gave the trade-off. The relationship between the variables is that the independent variables that customers selected affected their choices.

The first three questions were general to find out more information about the participant. For example, the responder had to select the age group he/she belongs to, the approximate number of visits to any hotel within the last year, and whom the participant usually travels with. The second part of the questionnaire was based on participant preferences. This section, designed by Tyrrell (2012), used an experimental design in Microsoft Excel and ran an analysis by including all possible differences based on price (\$100, \$150, and \$200), room type (studio, 1BR and 2BR) and kitchen (included or not). There were many alternatives that could have been selected, but in this case researchers chose D-optimality criterion. Based on the conditional logit model, a possible combination of 18 questions on a two-factor level was used. If people were asked how they compared all the different bundles, the questions would be 18 possible pairs

multiplied by 17 to compare with (since it would not make sense to compare same pairs against each other) and that would all equal to 306 questions per questionnaire. To decrease the number of questions asked in the survey, the D-optimality criterion to find eight paired comparisons was implemented to provide the most significant estimated coefficients. Offering eight paired comparisons to a respondent assumed that they picked one option for every pair. In each of the options, the underlying assumption was that the participant had to make a choice and that responders would purchase the room. This provided the most significant results, which helped with future segmentation and still kept the questionnaire short. These 8 pairs were the best possible combination since there were 1.7 quadruple designs available. The results of the study could have been more specific if the Pair 1 and Pair 7 results were not as obvious. In setting up of the D-optimality criterion the results depend on the closeness of the prediction to actual results the better the experimental design is. In this case, the prediction was that 1 bedroom is more important than studio.

3. Pilot Study

Appendix 1 is an example of our pilot questionnaire that was executed on November 5th 2012 by students of the class, Tourism Development Management 210, at Arizona State University. In this study, we had 50 participants and they all filled out the questionnaire completely. There was no difficulty during the process and the results indicated that researchers should proceed sending the survey to a larger group.

Furthermore, the survey was then sent out to the organization subscriber’s list in January of 2013.

Table 2.

Pilot Study Results

	Weighted Average
Kitchen	\$61.29
1 Bedroom	\$9.71
2 Bedroom	\$30.98

Table 3.

Pilot Study Coefficients and Standard Error

	Coefficients	Standard Error
Intercept	-0.2293	(0.2664)
Kitchen	-1.6978	(0.3475)
Rooms 1	-0.2690	(0.3584)
Rooms 2	-0.8583	(0.4294)
Price 1	1.5049	(0.4875)
Price 2	2.5661	(0.5122)

4. Distribution of Survey

The cross-sectional room preference online survey gathered information from guests who stayed at particular resorts and tested whether or not we might apply the results to generalize preferences of all the people who visit any of the company's 20 hotels. The survey used the consensus data collection method because the company has 206,957 international subscribers from Canada and the United States. This was the easiest and fastest way to reach all of them. In the past, most of the subscribers booked their rooms on the Internet, so this survey felt comfortable and was a quick way for them to answer our questions. The main survey was distributed through the resort's distribution list. Out of 206,957 subscribers, there were 2,922 bounces. About 59,848 people opened the email, and 12,668 submitted their responses. At the end, 10,357 clean responses were collected and analyzed which equaled to 5 percent response rate. The plan was to send the survey the first time, and then follow up with weekly reminders. Two weeks after the initial survey, the survey was sent again to people who have not submitted their responses yet. The goal was to have 10,000 responses within the month, and we were able to achieve that. That equaled to 5% of the subscribers list; this number was substantial enough to give information and provide significant findings.

Table 4.

Survey Statistics

Date Sent	Emails Sent	Total Opens	Distinct Opens	Open %	Clicks	Distinct Clicks	Click Through %
2/20/13	206,967	59,848	41,376	19.99%	15,221	12,668	6.12%

5. Description of Data

In this study we had 10,357 responders with valid data. Responders traveling with family were the largest segment consisting of 50.6% responders, following that were people who travel on their own (32.8%), responders who travel with friends (12.1%), and then responders traveling as a couple consist of (4.5%). Responders age 21-34 represent 8.5%; 35 – 49 year olds represent 26.7%; 50 – 65 year olds represent 44.7%; and 66 and older represent 20.1%. The tables below summarize of the number of responders belonging to each category; categories are divided into 16 more homogenous groups starting with the youngest age group (21-34) with the traveling companions listed in the following order: as a couple, as a family, solo and with friends. In Table 5, the total of those responders in the survey was 0.5%, which would equal to 47 people out of 10,357; this is the smallest represented group, and these results should not be considered significant.

Table 5. Number of responses

	As a couple	As a family	Solo	With Friends	Total
21-34	47	348	324	157	876
35-49	107	748	1658	256	2769
50- 65	221	2650	1202	562	4635
66 or older	91	1493	214	279	2077
Total	466	5239	3398	1254	10357

6. Data Analysis

With the assistance of a choice modeling approach, the results of this self-administered questionnaire helped determine dollar equivalence from studio to one-

bedroom, and further to two-bedroom. It also provided the dollar equivalent of having the kitchen or not. The choice modeling approach bundled hotel room characteristics and enabled responders to choose between pairs. Based on their choices researchers could estimate the trade-off between each amenity and price. In the questionnaire, a control set of potential room types was shown and based on stated preferences for some room types over others. The implicit values of individual elements such as one-bedroom, two-bedroom, and kitchen value, is estimated in dollar terms. Researches used the economic model which assumed that the probability of choosing option A over Option B is a logistic model of difference between utility (satisfaction) received from each unit.

$$Pr(A \text{ over } B) = \frac{1}{1 + e^{-[U(\text{Room } A) - U(\text{Room } B)]}}$$

As a difference in the utilities between A and B increases, the probability of choosing A increases. The survey had a limited number of room amenities (3). The abstract from all these factors was used to understand the primary considerations in the consumers' choice of lodging preference such as the type of room, kitchen (included or not) and price (\$100, \$150, \$200, which increases in increments of \$50, assuming that all dollar values will be the same). This study assumes that increasing from \$100 to \$150 will have the same value as increasing from \$150 to \$200. This is a linear function. The ratio of parameters of each amenity to the price parameter is used to estimate the relative importance of the amenity. Maximum likelihood estimation is based on the following principle: increasing one variable (room type, presence of kitchen, or price) decreases another variable and keeps the probability (F) unchanged (conditional logit model). The variable one bedroom ($\beta_{1(\text{one bedroom})}$) is the change from studio to one bedroom, or the

change from studio to two bedrooms ($\beta_{2(two\ bedroom)}$). The variable price is considered the change from a price \$100 to \$150 ($\beta_{4(price\ 150)}$), and from \$100 to \$200 ($\beta_{5(price\ 200)}$). The variable for kitchen ($\beta_{3(kitchen)}$) is considered the difference between not having a kitchen and having a kitchen. The following formula is used to calculate the utility of a bedroom:

$$F(X) = \beta_0 + \beta_{1(one\ bedroom)} + \beta_{2(two\ bedroom)} + \beta_{3(kitchen)} + \beta_{4(price\ 150)} + \beta_{5(price\ 200)} + \varepsilon_6$$

$F(X)$ = Utility of the bedroom (relative to a suite, no kitchen for a \$100/night)

β_0 = Utility from studio, no kitchen, \$100

$\beta_{1(one\ bedroom)}$ = 1 if 1 Bedroom, 0 otherwise

$\beta_{2(two\ bedroom)}$ = 1 if 2 Bedroom, 0 otherwise

$\beta_{3(kitchen)}$ = 1 if kitchen included, 0 otherwise

$\beta_{4(price\ 150)}$ = 1 if Price is \$150, 0 otherwise

$\beta_{5(price\ 200)}$ = 1 if Price is \$200, 0 otherwise

To determine the Value of the kitchen, we would calculate with a formula.

For an increase from \$100 to \$150, the value of adding a kitchen is calculated with following formula:

$$-\beta_2 \beta_{3(kitchen)} = \beta_7 + \beta_{4(price\ 150)} X$$

$$X = -\frac{\beta_2}{\beta_7}$$

$\beta_{3(kitchen)}$ = 1 if Kitchen is added

$\beta_{4(price\ 150)}$ = 1 if Price is raised \$50

X = portion of \$50 increase

Value of adding kitchen = _____(\$50) = \$

For an increase from \$100 to \$150

Value of adding kitchen = $-\frac{\beta_2}{\beta_8} (\$100) = \$$

Average Value of Kitchen = $\frac{1.14}{0.73+1.88} \$150 = \65.43

1.14 – kitchen coefficient

0.73 – Price 1 coefficient – difference from \$100 to \$150

1.88 – Price 2 coefficient – difference from \$150 to \$200

For the first baseline model (O₁) overall customer willingness to pay for kitchen and extra space is calculated using maximum likelihood estimation. For the second objective (O₂) there is a table of coefficient and standard errors for all 16 demographic segments.

In third objective (O₃) the customers have been segmented into 16 groups that are based on age and with whom they travel (travel companion). The customers' ages are divided in categories of 21-34, 35-49, 50-65, and 66 or older. Traveling companions are divided into solo, with a family, with friends, and as a couple. Based on this knowledge, this study can find the trade-offs/preferences for any of the 16 categories of customers when choosing the room. The first category is people ages 21-34 who travel solo. The second category is people ages 35-49 who travel with a family, and so on. This study assumes there is a difference in room amenity preference between customers ages 50-64

who travel as a couple and customers ages 35-49 who travel with a family. In this part we also used maximum likelihood estimation to calculate exact dollar amounts. At the end of this study, the types of customers who are willing to pay a higher price for an added kitchen, and exactly how much they would pay in dollars, will be known. This study also identifies what categories of customers prefer certain types of rooms (studio, one-bedroom, or two-bedroom) and how much more they are willing to pay for that extra space. This research even provides information about whether customers feel negatively about extra space. Based on this data, in the future, researchers will be able to market certain categories of customers based on their willingness to pay for those amenities. This data shows how customer demographics influence their willingness to pay. Lastly, this study answers whether there is any amenity that is negatively influencing customers' stay.

CHAPTER 5

RESULTS AND DISCUSSION

1. Objective 1: Aggregate Results

From all 10,357 responders, the results show that all responders value kitchen as an amenity in their hotel room, and they are generally willing to pay \$65.43 on top of their room value. All responders generally agree to preferring an extra bedroom in their hotel room and they are willing to pay \$37.39 more than for a studio room. A surprising result is that it seems based on the results that responders generally do not like to have a second bedroom and they are not willing to pay for it. Actually, the value of the two-bedroom compared to a studio is negative, which would mean that the customers place negative dollar and emotional value on the second bedroom.

Table 6.
Coefficient and standard error table for aggregate data

	Coefficients	Standard Error
Intercept	0.1408	0.0126
Kitchen	-1.1419	0.0162
Rooms 1	-0.6526	0.0155
Rooms 2	0.0287	0.0180
Price 1	0.7330	0.0199
Price 2	1.8848	0.0210

Table 7.
Aggregate responders' willingness to pay for amenities

	Weighted Average
Kitchen	\$65.43
1BR	\$37.39
2BR	-\$1.65

2. Objective 2: Results for 16 more homogenous segments

Table 8.

21 – 34 years old results

	21-34 / As a couple	21-34 / As a Family	21-34 / Solo	21-34 / with friends
Intercept	-0.247	0.015	0.107	0.031
s.e.	(-0.277)	(-0.124)	(-0.148)	(-0.172)
Kitchen	-1.001	-1.555	-1.587	-1.341
s.e.	(-0.348)	(-0.164)	(-0.189)	(-0.223)
Rooms 1	-0.407	-0.998	-1.619	-1.166
s.e.	(-0.358)	(-0.183)	(-0.289)	(-0.323)
Rooms 2	-0.384	-0.827	-2.181	-1.799
s.e.	(-0.406)	(-0.208)	(-0.311)	(-0.348)
Price 1	1.424	1.457	1.465	1.432
s.e.	(-0.447)	(-0.243)	(-0.4)	(-0.439)
Price 2	2.781	2.667	2.324	2.364

s.e	(-0.485)	(-0.256)	(-0.403)	(-0.442)
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Table 9.

35 – 49 years old results

	35 - 49 / As a couple	35 - 49 / As a Family	35 - 49 / Solo	35 - 49 / With Friends
Intercept	0.162	0.131	0.045	0.060
s.e	(-0.229)	(-0.075)	(-0.051)	(-0.126)
Kitchen	-1.526	-1.434	-1.612	-1.323
s.e.	(-0.299)	(-0.099)	(-0.066)	(-0.162)
Rooms 1	-1.016	-1.083	-1.391	-1.227
s.e.	(-0.348)	(-0.113)	(-0.094)	(-0.229)
Rooms 2	-0.833	-0.858	-2.041	-1.632
s.e.	(-0.387)	(-0.125)	(-0.102)	(-0.246)
Price 1	1.504	1.175	1.069	1.247
s.e.	(-0.468)	(-0.149)	(-0.130)	(-0.309)
Price 2	2.541	2.233	1.908	2.210
s.e.	(-0.485)	(-0.155)	(-0.131)	(-0.312)

Table 10.

50 – 65 years old results

	50 - 65/ As a couple	50 - 65/ As a Family	50 - 65/ Solo	50 - 65/ With friends
Intercept	0.1624	0.1007	0.0806	0.132
s.e.	(-0.144)	(-0.0375)	(-0.0616)	(-0.0859)
Kitchen	-1.2618	-1.4681	-1.4479	-1.3356
s.e.	(-0.201)	(-0.0492)	(-0.0781)	(-0.1079)
Rooms 1	-0.658	-1.091	-1.431	-1.377
s.e.	(-0.168)	(-0.056)	(-0.114)	(-0.158)
Rooms 2	-0.403	-0.803	-1.959	-1.803
s.e.	(-0.219)	(-0.061)	(-0.123)	(-0.167)
Price 1	1.049	1.071	1.155	1.099
s.e.	(-0.228)	(-0.073)	(-0.157)	(-0.214)
Price 2	2.166	2.002	1.898	1.845
s.e.	(-0.25)	(-0.076)	(-0.158)	(-0.214)

Table 11.

66 years old or older results

	66 or older/ As a couple	66 or older/ As a family	66 or older/ Solo	66 or older/ With friends
Intercept	0.1409	0.0713	0.0866	0.101
s.e.	(-0.2536)	(-0.043)	(-0.1225)	(-0.108)
Kitchen	-1.1419	-1.2456	-1.4851	-1.2149
s.e.	(-0.3733)	(-0.0552)	(-0.1564)	(-0.1303)
Rooms 1	-0.653	-1.021	-1.264	-1.345
s.e.	(-0.224)	(-0.065)	(-0.21)	(-0.191)
Rooms 2	0.029	-0.692	-1.757	-1.81
s.e.	(-0.362)	(-0.068)	(-0.228)	(-0.194)
Price 1	0.733	0.946	0.877	0.827
s.e.	(-0.318)	(-0.081)	(-0.289)	(-0.251)
Price 2	1.885	1.741	1.513	1.29
s.e.	(-0.385)	(-0.085)	(-0.289)	(-0.251)

The big differences in kitchen coefficients from aggregate results to 16 more homogenous groups are noticeable across all ages for people traveling solo. Standard error is higher in 16 more homogenous groups as well, especially for people aged 66 or older who are represented by a very small sample (N = 214) of 10,357. There are also huge differences in the two-bedroom value coefficients (difference in value between studio and two-bedroom) when considering travelers' companions. Across all age groups there are huge differences in coefficients for traveling as a couple and/or as a family, compared to results from people traveling solo and/or with friends. Results from the more homogenous groups of people aged 21-34 and 35-49, as well as people traveling as a couple or as a family, differed from the aggregate results when considering Price 2 (difference from \$100 to \$200). Those in the aforementioned age groups who traveled

solo or with friends did not have as high a difference from aggregate results in the Price 2 category.

3. Objective 3: Willingness to Pay and General Trends

From the 16 categories results showed that older people, depending on traveling habits (on their own, solo or with friends), are willing to pay a higher price for a kitchen, one-bedroom and two-bedroom. Opposite trends stand as well; the younger the responders are, and if they travel as a couple or as a family, the less they are willing to pay for the kitchen, one-bedroom and two-bedroom. The interesting trend is that the differences in the value of two-bedrooms over one-bedroom, for people traveling as a couple and as a family, all have negative value. None of the responders wanted to rent two bedrooms. For couples, this could be explained as not having a need for extra space. For families, it is very hard to manage family members in separate rooms. It could also be connected with the fact that responders don't want to pay for extra space on their vacation; they perceive the lack of extra space as a way to save money. People traveling solo or with friends like their space and they would pay around \$20 more for the extra space two bedrooms provide.

All of these results would suggest if people are planning to build a hotel, kitchens are an amenity that should definitely be invested into. For example, in results from the study, people traveling solo who are 66 or older are willing to pay \$93.20 for having a kitchen in the room. The second-highest dollar value for a kitchen came from the same age group but from people who travel with friends; they are willing to pay \$86.07. An additional conclusion is that people traveling solo in all age ranges are willing to pay the

most for a kitchen in the room. This could be connected with the fact that people traveling without companions lack the desire to eat at restaurants. Also, people traveling solo are usually on business, and do not have time for extra meals, making the kitchen a useful amenity.

Additionally, a majority of rooms should be one-bedrooms because that would maximize revenue and, based on the study, one-bedrooms are in the highest demand. From the study results, people age 66 or older traveling with friends are willing to pay \$95.27 for one bedroom. One-bedroom has been defined as 827 square-feet of living space which includes a living room with a sofa bed and a separate bedroom with a bed, divided with doors. The solo group has the highest willingness to pay for one-bedroom across all age ranges varying from \$62.82 to \$93.20. Surprisingly, people traveling with families do not have the highest willingness to pay for one bedroom. People who travel with family could have young children and would prefer to be able to hear and see their children at all times; having doors dividing the space is not attractive. The value of two bedrooms over studio has surprising results. As stated before, people traveling solo are most willing to pay for two bedrooms and their range is from \$86.35 to \$110.29. People who travel solo are used to having a lot of space and they value it. When considering people traveling with family or friends, they would prefer to have a lot of space and that is why they showed a willingness to pay more for two bedrooms. It is not surprising that people traveling with friends are the ones willing to pay the most for two bedrooms. They value this amenity from \$71.08 for 21-34 year olds to \$128.22 for people aged 66 or older.

The last table is the value of two bedrooms over one bedroom. As it was mentioned before, the biggest anomaly is people traveling solo valuing two bedrooms more than one bedroom. If the people traveling alone were to travel with family or with friends, they would prefer to have more space than one bedroom. When traveling alone, they are used to having one bedroom to themselves, so they cannot imagine having friends or an entire family in the same space usually occupied by themselves. It is obvious that people traveling in smaller groups prefer to have one bedroom over two bedrooms because those results were negative. This could be connected to the fact that they prefer to save money while on vacation. They are also not expecting to have as much space as they would at home because they are not planning to spend as much time in a hotel room, instead spending it exploring the destination. Additional reasons could be that parents with small children prefer to not have doors. It is not surprising that people traveling with friends prefer to pay more for two bedrooms than one bedroom. Its value for those traveling with friends is not as high, ranging from \$17.57 to \$32.95.

Table 12.
Kitchen Value in US Dollars

Traveling with/Age	21-34	35-49	50-65	66 or older
As a couple	35.70	56.59	58.87	65.43
As a family	56.55	63.12	71.67	69.55
Solo	62.82	81.22	71.15	93.20
With friends	52.98	57.38	68.05	86.07

Table 13.
Value of 1BR over Studio in US Dollars

Traveling with/Age	21-34	35-49	50-65	66 or older
As a couple	14.51	37.67	30.69	37.39
As a family	36.30	47.69	53.25	57.02
Solo	64.09	70.13	70.31	79.34
With friends	46.09	53.23	70.17	95.27

Table 14.
Value of 2BR over Studio in US Dollars

Traveling with/Age	21-34	35-49	50-65	66 or older
As a couple	13.70	30.88	18.80	-1.65*
As a family	30.09	37.75	39.22	38.62
Solo	86.35	102.85	96.27	110.29
With friends	71.08	70.80	91.85	128.22

* In this category were only 91 responders, which accounts for only 0.9% of a total number of responders

Table 15.
Value of 2BR over 1BR in US Dollars

Traveling with/Age	21-34	35-49	50-65	66 or older
As a couple	-0.80	-6.79	-11.89	-35.74
As a family	-6.21	-9.94	-14.03	-18.40
Solo	22.26	32.72	25.96	30.95
With friends	24.99	17.57	21.68	32.95

CHAPTER 6

CONCLUSION

Limitations

There are few limitations in this study. The first is that a hypothetical hotel is used and results are applied to every hotel. An additional limitation is that rooms' exteriors, service quality and the brand's overall image are not included in the study. These aspects would influence consumer choice and willingness to pay more for a particular type of room. Furthermore, this research is based on the segment of people who use email and decide to answer the questionnaire. There is a chance that people who do not respond to their emails would have different preferences.

Future Research

In this research, market segmentation and choice modeling allowed us to segment markets into more homogenous groups, and by doing that allowed us to calculate customer willingness to pay for additional amenities. By knowing customer willingness to pay, it can be assured that customers always feel they are getting a high value out of the transaction and increase the likelihood of future transactions. With the current industry focus of "lifetime customer value," which focuses on revenue that a guest brings across a lifetime, this research can help keep customers highly satisfied and keep stakeholders profiting as well. The significance of this research is the concrete numbers that can be applied immediately in the hospitality industry, and will positively impact

business revenue and customer experience. There are a few recommendations for future research that could add to this study. An example would be to perform the same survey using different variables in market segmentation, such as geographic, psychographic, and behavioral segmentations. For geographic segmentation, research could be based on the customers' states of origin to find whether they prefer different amenities and whether their willingness to pay is different. For psychographic segmentation, research can see if there are different amenities people choose based on whether tourists are motivated by rest and relaxation versus if they are motivated by action and challenges. For behavioral segmentation, research can discover if there are different room preferences based on if customers are golfers versus sightseers. It would be interesting to review results that are based on these five variables and compare what are the most suitable clusters of tourists for resorts, which will, in turn, improve sales and provide profits for resorts.

Departing words

Since original data suggested that consumers do not like two bedrooms and they had negative dollar value, in August of 2013 the organization (name withheld for blind review) had implemented first changes based on results from this study. The revenue manager changed the names of two bedrooms on a few of their properties into "family suites". Since August, nowhere in the descriptions of rooms the organization mentioned is there a two-bedroom suite. There were lists of amenities, numbers of beds, kitchens and so on. The order of amenities was also determined based on their value to consumer; the higher the value based on the vacation rental survey, the higher the amenity was listed (2012). Only 3 months after implementation, there are significant results showing that the

organization is achieving higher profits. With all reservations that were booked at one property in the last 3 months, the property had an increase of 6% in two-bedroom reservations compared to same months in the previous years (Table 19 & 20). The information is only provided for 2012 and 2013. This is a great result, and relevant to the field because one competitor, Embassy Suites, has been running a commercial on TV in February 2014, advertising two-bedroom suites as a perfect bedroom for the whole family. If they had used our data they would not focus a lot of advertising money in that direction because our study proves that we should focus on advertising one-bedrooms for people traveling with families. People of all ages traveling with a family had a negative value for renting two bedrooms. Researcher advice for the future based on this study is before investing a large amount of money into advertising, first it should some be invested into research and if results are appropriate follow up with an ad campaign.

Table 16.

Results from implementation of the study results at Hawaii properties (Data provided only for 1BR and 2BR) 2013 is after room name change – 2012 is before room name change

	Reservations 2013	Reservations 2012	% 2013	% 2012	Nights 2013	Nights 2012
2BR	219	223	35.32%	29.65%	1009	873
1BR	400	525	64.52%	69.81%	2024	2066
Total	630	752			3065	2953

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APPENDIX A

2013 Guest Preference Survey

Do you hate junk emails? We sure do! At Shell Vacations we are working hard to deliver unique experiences that are specifically suited to our guests travel needs. We would like to learn about your travel preferences so that each offer we send is something you want to read about.

Your answers will play an essential role in determining what customer's value when booking a hotel room. In fact, this is so important to us that we are offering 20% off your next stay with us just for completing this short survey.

We thank you for your participation!

In each of the following questions, rooms are described with different amenities. Please, review the amenities carefully, and then check the preference A or B that you would prefer to book overnight.

When choosing, please keep in mind rooms' descriptions:

The studio has a 419-square-feet of living space, with a living room area with a bed and sofa bed.

One-bedroom (1BR) has an 827-square-foot of living space with a living room with a sofa bed and a separate bedroom with a bed. (Divided with doors)

Two-bedroom (2BR) has a 1,257-square-feet of living space with a living room and two bedrooms with beds.

1. What age range best describes you?
 - a. 21 to 34
 - b. 35 to 49
 - c. 50 to 65
 - d. 65 or older
2. How many times have you stayed in the hotels in the last year?
3. How do you travel to Shell Vacations Resorts?
 - a. As a couple
 - b. As a family
 - c. With friends
 - d. Solo

Example: Check A or B

Pair 0	A ✓	B
Type of Rooms	Studio	Studio
Kitchen (Included with a room)	Yes	No
Price per room per night	\$100	\$100

Check A or B

Pair 1	A	B
Type of Room	2 BR	Studio
Kitchen	No	No
Price	\$150	\$200

Pair 2	A	B
Type of Room	2 BR	Studio
Kitchen	No	Yes
Price	\$200	\$150

Pair 3	A	B
Type of Room	Studio	1BR
Kitchen	No	No
Price	\$100	\$200

Pair 4	A	B
Type of Room	1 BR	2BR
Kitchen	Yes	No
Price	\$200	\$150

Pair 5	A	B
Type of Room	1 BR	Studio
Kitchen	No	Yes
Price	\$150	\$200

Pair 6	A	B
Type of Room	Studio	1BR
Kitchen	No	No
Price	\$150	\$100

Pair 7	A	B
Type of Room	1 BR	2 BR
Kitchen	No	Yes
Price	\$150	\$100

Pair 8	A	B
Type of Room	2 BR	Studio
Kitchen	Yes	No
Price	\$150	\$100

APPENDIX B
IRB APPROVAL



Office of Research Integrity and Assurance

To: Timothy Tyrrell
UCENT

From:  Mark Roosa, Chair 
Soc Beh IRB

Date: 01/17/2013

Committee Action: Exemption Granted

IRB Action Date: 01/17/2013

IRB Protocol #: 1301008704

Study Title: Hotel Room Preference Study

The above-referenced protocol is considered exempt after review by the Institutional Review Board pursuant to Federal regulations, 45 CFR Part 46.101(b)(2) .

This part of the federal regulations requires that the information be recorded by investigators in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. It is necessary that the information obtained not be such that if disclosed outside the research, it could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.

You should retain a copy of this letter for your records.

Johnston, Adriana Kale Tyrrell, Timothy J

