REVENUE MANAGEMENT, DYNAMIC PRICING AND SOCIAL MEDIA IN THE TOURISM INDUSTRY: A CASE STUDY OF THE NAME-YOUR-OWN-PRICE MECHANISM

by

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I certify that all material in this thesis which is not my own work has been identified and that no material has previously been submitted and approved for the award of a degree by this or any other University.

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ABSTRACT

The application of revenue management (RM) is changing more rapidly than ever before, driven as an important factor of the daily operation to keep prices competitive and to create real-time optimal pricing. In the age of the Internet and social media, negotiated fixed rates have become outmoded. Consumers now have access to online rate comparisons and real time reviews. They think more strategically when making purchasing decisions. Thus, they become more demanding.

This research provides an empirical study of revenue management and pricing with an emphasis given to the hospitality industry. The aim of this research is to examine the gap between the theoretical approach and the empirical analysis, the rationality between the implementation of dynamic pricing approaches and the impact on the customer. Furthermore, the research examines the perception of consumers' willingness to pay when using the Name-Your-Own-Price (NYOP) mechanism, which allows customers to have a greater influence on the amount they are prepared to pay. Instead of posting a price, the seller waits for a potential buyer's offer, which he or she can either accept or reject. Finally, this study examines, whether the use of social media plays a decisive role in the online purchase environment used by the hospitality sector and the effect it has on a consumer's willingness to pay. Accordingly, hotel revenue managers will be able to use the findings of this study to effectively plan their short-term, and long-term pricing strategies to generate a stronger revenue management performance for their property, namely to increase the RevPAR (revenue per available room). The research can be useful to businesses, as empirical data and tests were employed to determine what kind of impact the different pricing policies have on the long-term profit optimization. These practical and theoretical elements of the field reinforce each other, as well as to a large extent, the constructive interplay of theory and practice.

The research is twofold, the holistic approach, which discusses the development of the theoretical dimension, is complemented by the practical analysis of the collected data of the surveys. This approach ensures the relevant observation of 'real-time' data and the evaluation of the set of

hypotheses. The study conducted two large scale interrelated structured surveys. The first structural survey (NYOP) provides a better understanding of the final consumer, by using the name-your-own-price mechanism and by observing the extended role of social media in the booking procedure. Hypotheses were tested and in the second survey in-depth data from revenue managers and executives working across the tourism industry was collected, in an attempt to measure the use of pricing strategies within the industry.

The research contributes to the theory by empirical testing how the extended RM objectives influence RM and pricing. It provides a clear picture of the necessary elements for a successful implementation of pricing strategies. Finally, the study has implications for the consumer. Thus, the researcher investigates consumer's perception to the NYOP model and the expanding role of social media to the consumer-booking pattern.

I dedicate this work to

my parents

ACKNOWLEDGMENTS

"As you set out for Ithaka hope the voyage is a long one,
full of adventure, full of discovery."

Constantinos P. Cavafy, Poet

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List of Acronyms

AA	American Airlines
ADA	Airline Deregulation Act
ADR	Average Daily Rate
B2B	Business-to-Business
B2C	Business-to-Consumer
BOAC	British Overseas Airways Corporation
C2B	Consumer to Business
CB	Consumer Behaviour
CDP	Consumer Decision Process
CFA	Confirmatory Factor Analysis
DP	Dynamic Pricing
DV	Dependent Variable
EBITDA	Earnings Before Interest, Taxes, Depreciation, and Amortization
EFA	Exploratory Factor Analysis
GDS	Global Distribution System
GNEs	GDS New Entrants or "Genies"
HP	Hidden Price
ICT	Information and Communication Technologies
IV	Independent Variable
LCC	Low Cost Carriers
M	Mean
NYOP	Name-Your-Own-Price
OR	Operations Research
OTA	Online Travel Agency
PE	People Express Airlines
ROI	Return on Investment
RevPAR	Revenue per Available Room
RM	Revenue Management
SEM	Structural Equation Model
SD	Standard Deviation
SM	Social Media
UNWTO	World Tourism Organization
UGC	User-Generated Content
WTM	World Travel Market
WTP	Willingness-to-Pay

1 INTRODUCTION

Everything is worth what its purchaser will pay for it.

Publilius Syrus "Sententiae"

Roman Writer (1ˢᵗ century ~100 B.C)

1.1. Background

This chapter provides a general introduction to the topic of revenue management and pricing strategies. It serves as a foundation for the rest of the thesis. It starts out with an explanation of revenue management, on what revenue management is and why it is needed, its history and the business conditions under which revenue management optimization and pricing is applied. It continues with a brief overview of the costumer's behaviour when purchasing services. Finally, it presents the motivation behind and the objectives of the research, it then provides a chapter-by-chapter outline of thesis.

Writing a thesis on revenue management and pricing approaches, a subject that has been established for more than 30 years, is a challenge. However, the changing environment in pricing provides an ultimate scope for research in this field. Moreover, the topics have been mainly studied separately. In this study, the researcher, using a working framework, has classified their interrelations. Therefore, within them, the intention is to provide an outline for categorizing the topics. Additionally, the thesis has empirically examined the connections and applications of different levels of revenue management and pricing approaches within the different parts of the hospitality and tourism industry.

Hospitality and tourism fall within the category of service industries that encompasses an extensive range of activities including accommodation and service facilities (Edgar, 2000:15; Guilding, 2014:2). According to Morrison (2010:72-73), there is a macro-system that exists at the hospitality and travel industry level and many micro-systems that the industry gets fragmented into levels of organizations. There are interrelated groups of business and organisations. The industry, then, not only includes hotels, restaurants, and travel agencies, but also refers to other kinds of organisations that offers a wide variety of services (Barrows, Powers, and Reynolds, 2012). This research working framework is focused on a disparate range of services at which pricing has major implications that affect the demand for those services.

Although revenue management as such originated in the airline industry based on capacity control – fare experiments in British Overseas Airways Corporation (now British Airways) in the beginning of 1970s (Littlewood, 1972), it later spread widely and was successfully implemented in other industries, such as the hotel, the car rental, the hospital, the broadcasting, and the energy industries, to just name a few, though only after the deregulation of the airline industry in 1978 (Smith, Leimkuhler, & Darrow, 1992; Talluri and van Ryzin, 2004). These industries share the same characteristics, similar to the airline industry, whose revenue management considers such components as perishable products, the finite selling horizon, consumers' price sensitivity, and substantial fluctuations in demand (Bitran and Caldentey, 2003). An essential effect of deregulation was that the market became highly competitive, which has led to promotional rates. Therefore, revenue management became a management tool mainly used by airlines, to differentiate clients segments and

differential pricing strategies. Hence, they are to optimize the capacity constraints and the demand uncertainty prior to determining the pricing strategy. An empty seat does not generate any revenue. Revenue management (RM) is not based on setting and updating prices but on setting and updating the availability of fares, where each fare class has an associated rate. Therefore, RM is not just the management of the inventory, rather it decides on how the above management decisions are made it is a method of decision making (Talluri and van Ryzin, 2004). Companies practicing RM techniques have seen a way to increase revenue by an estimated 3% to 7% and to reduce variable and fixed costs (Cross, 1997:4; Phillips, 2005:13).

In addition, the intuition on pricing decisions can be based on either a static or a dynamic approach. Traditionally, when selling their products hotels have used a flat pricing policy (static) over a definite booking period. Therefore, using dynamic pricing creates different target market segments, which are based on the consumers' 'willingness to pay' (WTP). Consequently, one of the basic objectives of effective revenue management implementation is based on the elasticity of demand. When there is a change of demand, this creates a response, reflected in a change in price, to maximise revenue. This is the main driving force of dynamic pricing when determining optimal selling prices over the booking horizon by discriminating consumer behaviour, in a technique that obtains the maximum consumer surplus. This flexibility contributes to the seller advantage of non price commitment. Moreover, an effective dynamic pricing strategy must consider the impact of competitive strategies focused on market-share from the competition. However, profitability is not coming from the market share. Pricing is the quickest approach to create an impact on on the short-term

sales volume and to generate revenue. Moreover, it is a strategic decision for long-term profitability. This focus on different aspects does not utilize the entire spectrum of the day-by-day operations. Specifically, the practice in the hospitality industry requires that the revenue manager is able to read, interpret, and analyse the financial position of the company based on operational results, while maximising revenue.

1.2. Effect of the Internet on Revenue Management

Over the past six decades, tourism has experienced continued expansion and diversification, being one of the largest and fastest-growing economic sectors in the world. According to the UNWTO World Tourism Barometer, in 2014, the world's tourism industry still continued to rebound from setbacks that happened from 2008-2010, years marked by persistent economic turbulences, major political changes in the Middle East and North Africa, and the natural disaster in Japan. Worldwide, international tourist arrivals (i.e. overnight visitors) grew in 2014 by 4.7% to 1138 million, compared to 1087 million in 2013. Growth is expected to remain in 2015 and is estimated at 3.0% to 4.0% worldwide (UNWTOrganization, 2014).

Figure 1-1 provides an illustration of international tourist arrivals between 1995-2013.

Figure 1-1 UNWTO, Inbound Tourism Statistics 1995 - 2013

Source: The World Tourism Organization (UNWTO)

The rapid development of Internet users has motivated most of the tourism organizations to implement Internet technologies as part of their marketing and communication strategies (Buhalis and Law, 2008). The Internet has changed the way companies are doing business. Therefore, e-commerce creates a vehicle for companies to improve their pricing capabilities, providing companies with a variety of information to understand consumer behaviour (Phillips, 2005:11). According to Forrester Research, a typical traveller will research three out of four trips, and buy more than two-thirds of all travels online (Harteveldt, 2011). The inaugural World Travel Market Industry Report 2011 revealed that more than one in three (40%) of UK holidaymakers used social media when planning and researching their holidays (WTM, 2011). Moreover, the WTM 2014 industry report illustrates that one in ten (9%) of UK holidaymakers and 14% of the US travellers booked a holiday through a peer-to-peer site (WTM, 2014).

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Figure 1-2 provides and overview of the Internet user footprint worldwide as of June 2015.

Figure 1-2 Internet Users in the World 2015 (Second Quarter)
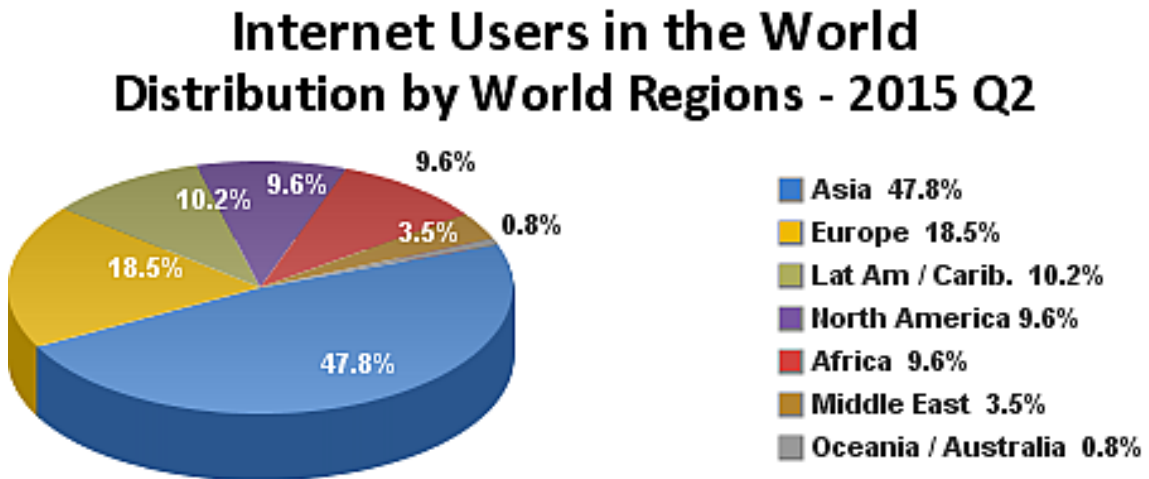
Source: Adapted from InternetWorldStats - www.internetworldstats.com/stats.htm

Over the past decade, travel planning has changed drastically and online bookings have grown, as the Internet has made the communication between the supplier and the consumer easier. Moreover, the growth in social networking on the Internet has even negatively changed the 'in-person' social networks (Sigala, 2010). These changes are visible in the 'customer experience', which, nowadays, is more obviously shared in real time through technological innovations (e-mailed, videos, photos, tweets, blogs) and stored for posterity (Tsiotsou and Goldsmith, 2012:36). The world of hotel distribution continues to evolve, as the Internet transforms the interaction between consumers and suppliers encouraging constant innovation and new, creative ways to book travels. Therefore, because of the Internet and the changes in the booking window, the distribution channel environment has been changed and

today's customers are well informed about products and prices. These changing circumstances increase the fluctuation of pricing decisions and provide the hotel companies a variety of information about consumer's booking pattern and behaviour that was previously unavailable (Phillips, 2005).

E-commerce has provided firms today with better access to purchaser's data. Therefore, pricing has taken centre stage on the Internet, where comparison sites like kayak.com, travelsupermarket.com, trivago.com, kelko.com, etc. assist consumers in finding the lowest prices for a variety of goods and services. Consumers have become active service producers (Tsiotsou and Goldsmith, 2012). Studies showed that consumers book online, after factoring in reviews and comparing hotel rates (Anderson, 2012). There are many factors that determine if the consumer will directly book a hotel or if they will use an OTA. Hence, the adoption of e-commerce technologies provides a way for companies to improve their pricing capabilities and differentiation. Over time, the implementation of revenue management and pricing processes must adapt to an adaptive system that reacts to the last minute changes in real- time. Currently, consumers' demands and expectations differ from one another, including price expectations as a base, making the consumer satisfaction an experience. Thus, the consumer has various choices and the supplier should create real-time optimal pricing to keep prices competitive and maximise bookings in a more effective and profitable manner (Kimes and Wagner, 2001).

1.3. Historical Background

Revenue management (also called yield management) and pricing, were first mentioned in the 1987 annual report of American Airlines (AA) and were

described as "selling the right seats, to the right customers, at the right prices" (Cross, 1997:4). Kimes and Chase (1998) revealed a revised definition of Yield Management and combined the former definition with four elements–times. They define yield management as selling the right capacity, to the right customers, at the right time for the right prices. Therefore, the concept is based on revenue growth employing the assumption that different consumers are willing to pay different prices. It is using the power of the consumer's demand for a product and the consumer's characteristics provided as a means of improving profitability, whilst avoiding cost cutting. This approach is primarily based on an economic theory that addresses the forces of demand and supply. The innovation behind it lies in the way decisions are made, through the demand management decisions method (Talluri and van Ryzin, 2004:4).

The first significant milestone in the development of revenue management (Yield Management) was the Littlewood's model – BOAC in 1972. It uses two same product classes with associated prices where $r_1 > r_2$ and the available capacity is C (Talluri, et al., 2009). The model controlled the capacity providing 'early bird' discounts by stimulating demand to fill empty seats (McGill and Van Ryzin, 1999). However, the development of revenue management techniques, of what came to be called 'yield management,' dates after the deregulation act of the U.S. airline industry in 1978. The Airline Deregulation Act (ADA) removed the fare and schedule restrictions. Hence, it encouraged new companies' entrance into the market. These companies offered significantly lower prices by efficiently utilizing resources and completely eliminating certain services, while entering underserved markets. This created a capacity increase where the scheduled airlines lost market share and did not match the no frills airlines'

fares because they would not be able to cover the costs (Phillips, 2005; Cross, 1997; Talluri and van Ryzin, 2004). It was the era of the *'Flying That Costs Less Than Driving'* advertising slogan (Cross, 1997:103). This strategy, promoted by People Express Airlines (PE) was based on offering low fares for the same destinations than other scheduled airlines. American Airlines reacted with a price war, offering low fares for a number of seats, restricted to less price sensitive consumers such as business travelers who continued to pay full fare tickets. Moreover, they restricted low price seats to a minimal available number, in order to save full fare seats. Finally, AA had an automated reservation system in place, in contrast to the no frills competitors that 'decided not to invest in automation' (Cross, 1997:103). In practice, American Airlines promoted a market segmentation offering different prices to different groups of consumers. A price discrimination was introduced, selling low priced tickets to price sensitive consumers, in order to fill the empty seats and to counterattack the competitors' aggressive prices. Furthermore, the technology advantage increased AA's ability to correctly forecast the empty seats and offer them to price sensitive consumers. Thus, revenue management (RM) or yield management (YM) was born during that time and the innovation to create a system that optimizes the seats capacity was credited to Robert Crandall, CEO of American Airlines. Without this innovation, certain schedules would be flying with a number of empty seats. These 'best practices' employed by AA have influenced the development of RM and have become fundamental for many industries. It was this time that Donald Burr, the entrepreneur behind People Express Airlines mentioned *'if we don't invent an answer to this we're history….'* (Cross, 1997:118).

Recently, in late June 2014, PEOPLExpress attempted a comeback as a brand. However, the competitive environment is probably a sticking point for an airline start-up, preventing such an endeavour. After a series of mistakes and licences, the airline was forced to suspend their services (PEOPLExpress Airlines, 2015).

Figure 1-3 presents the major milestones in the science of Revenue Management.

Figure 1-3 Milestones of Revenue Management Innovation

1970
Standardized Prices and Profitability Targets (Littlewood Rule - Rothchild)

1978–1985
Low-Cost Airlines PeopleExpress
Global Distribution Systems (GDS)

1985-1991
1986
PeopleExpress went bankrupt
Adoption of RM by Major Airlines (Delta, United etc.)

1991–2014
RM Expansion
Car Rental
Hotels, Rail, Cruise Lines, Energy, etc.

2013-2015
RM adapted in Sharing Economy
(Uber, Airbnb)

1978
Airline Deregulation Act

1985
American Airlines' "Ultimate Super Saver Fares" & DINAMO

1991
American Airlines "RM generated additional $500 millions in revenue per year"

1995
National Car Rental Success Story - **Marriott Hotels** Incorporate RM - One Yield

Source: Author

The successful approach, initiated by the airline industry has become the prototype widely implemented and continually improved by many industries that had the same issues as airlines did. The initial aim of a revenue management approach was to sell the empty seats. However, this incorporation of revenue management was incremental and kept the fundamental characteristics. Since then, revenue management has grown, adopting the new market challenges enabled through the Internet and has been the centre of attention of both, industry practitioners and academic researchers. Revenue management is currently adopted and employed by hotels, tour operators, car rentals, railways etc., within the service industry and has been focused on maximising the profitability.

In light of the efforts to improve the implementation of revenue management, many practitioners and researchers made important contributions, introducing features with sophisticated alternative methods and solutions to incorporate the consumer purchasing behaviour, policies, and elaborated revenue management practices. Therefore, the application and principles of revenue management aim to improve the effective allocation of capacity, inventory, pricing controls, and pricing strategies, and tactics based on different consumers' purchasing characteristics on how the consumer perceives the willingness to pay (WTP) as well as the competitors' data sets in an effort to optimize higher turnover.

Table 1-1 summarizes the different industries and the segmentation criteria used to develop Revenue Management.

Table 1-1 Industry Classification Using Revenue Management

Industry	Product	Type of Customer Inventory / Segmentation	Year
Passenger transport	Tickets for transport, seats	Time of booking, venue of booking, subscriptions, conditions	2002 – Deutsche Bahn
Car Rentals	Right to use car	Time of booking, point of sale, return behaviour, conditions	1993 – National
Hotels	Overnight stay	Time and duration of booking, venue of booking, conditions	Mid – 80's Marriott
Cruises	Participation in cruise	Time and duration, packages	1995 - American Hawaii Cruises
Casinos	Overnight stay	Hotel-like segmentation versus customer value	2002 - Harrah's Cherokee Casino & Hotel
Freight	Transport or storage	Time and venue of booking, conditions, volume versus weight	1991 – UPS
Advertising	Placement of advertisement or commercial	Time of booking, subscription or bulk, placement, frequency	1992 – Canadian Broadcast Corporation
Telecommunication	Bandwidth in time or data	Subscription plan, age of customers, business versus private customers	1996 – AT&T
Energy	Transport and usage of energy	Bulk buys, seasonality	2000 – Alta Energy
Retail	Fashion, consumer electronics, groceries	Seasonality, product life cycle	Beginning 2000's

Source: Yeoman and McMahon-Beattie (2011); Cross, Higbie and Cross (2010) updated and expanded by the Author.

The practical application of revenue management in a B2B or B2C environment requires several conditions to be applicable (Phillips, 2005; Cross, 1997). Historically, the main RM assumption relates to the existence of a relatively fixed capacity, either in the hotel industry or the airline industry. A hotel property has a fixed number of rooms available as inventory to be sold daily and a total number of room nights possible for the year, as the hotel is not able to offer more rooms during periods of high demand. However, the assumption is not exactly restrictive for the airline industry or the travel industry (i.e. bus companies, railways). Although the plane or bus overall has a fixed capacity, the short term available capacity varies. Obtaining a larger aircraft or bus closer to the departure date, to match demand and supply, might exceed the capacity of a plane or bus.

Furthermore, inventory is immediately perishable. The hotel rooms that remain unsold during the day represent lost revenue that cannot be recovered. This is applicable as such to restaurants, as the tables must be efficiently used, or hospitals because of the operating room slots and the patient accommodation rooms.

Another fundamental characteristic of revenue management success in the airline industry was the ability to effectively segment consumers based on elasticity of value attached to a certain service. The segmentation was divided into consumers' sensitive to price and those paying full fare. Consumer segmentation is based on the consumers' different willingness to pay. Hence, pricing is stipulated by finding ways to set different prices for different segments (i.e. couples, families, senior consumers).

The techniques of revenue management must adopt a different approach to matching service offered timing. It is common in the hospitality industry that

consumers are booking a service well in advance. These ties in with the offered unconstrained and constrained capacity and pricing related to the consumers' willingness to pay for the service ahead of time (EBD-Early Bird Discount or Last Minute). Moreover, this creates an opportunity in relation to timing as the service provider can adjust to forecasted demand levels and similarly adjust prices to adopt the demand requests during peak and shoulder periods.

A key characteristic of the hospitality industry is the seasonality that creates a significant sales volatility. This volatility can cause an uncertainty on whether the company has the capacity to maximise revenue and profit. This seasonal sales volatility creates cash management challenges and the need for efficient operational planning in balancing supply, demand, and seasons. The hotel industry faces severe seasonal demand fluctuations. They have seasonal sales and the demand fluctuates between off, middle, and peak seasons. Moreover, they have to face the weekly sales fluctuation of business or airport hotels. They receive a high proportion of consumers from Tuesday to Thursday, while the occupancy falls dramatically from Friday to Monday. The fixed costs, however, remain the same.

The last RM characteristic feature in the hospitality industry is related to the high fixed costs and the low marginal costs. The main operating fixed costs do not vary in line with the sales fluctuation. These fixed costs mainly result from the hotel itself as a property (rent or refurbishment, renovations, investments in the hotel infrastructure), fixed salary costs for the administrative and operational staff running the day-to-day hotel operations. Those fixed costs incur irrespective of the hotel's occupancy. It is important for hotels to accurately determine the level of daily sales necessary in order to achieve the breakeven point that will cover the fixed costs.

All of the above mentioned characteristics apply to companies producing or owning goods and services, but also for intermediaries such as bedbanks providers that offer an opportunity for hoteliers to distribute mainly offline their capacity to tour operators and travel agents and undercut the dependence on major OTA, and destination management companies. Therefore, the concept is based on the assumption that changes to hotel room rates or other services can occur on a totally transparent sales fluctuation as response to different consumers' willingness to pay for the same product and market conditions. Product and price differentiation according to consumer characteristics stipulate the opportunity to maximise revenue and profit.

Traditionally, hospitality companies face complex selling decision because of the broad range of activities and offered services. The rising of the e-commerce provided the ability of pricing flexibility and of determining transparency in an online environment. This pricing optimization improves companies' profitability by providing different terms and condition in a real time online pricing environment.

This changing environment promotes pricing strategies as the main variable used to manage demand. Therefore, companies use a number of dynamic pricing forms, such as promotions, auctions, discounts, clearance sales, markdowns, and price negotiations to respond to market condition requirements. To which extent a company has the ability to change prices according to market conditions is determined by the level of flexibility in setting prices (Talluri and van Ryzin, 2004:176). Considering different business types, the price based revenue management involves pricing flexibility to change prices dynamically, which is costless in most cases. Similarly, rationally reducing the sales quantity by increasing prices, creates an increase on

revenue at the same time as it increases profitability, due to less cost. Nowadays, the use of the Internet as a main distribution channel leverages this capacity as an innovative pricing mechanism, the dynamic setting of prices being almost costless. Between the combination of price flexible RM and the management of demand based on quantity RM, when all requirements are fulfilled the price based RM is preferable (Talluri and van Ryzin, 2004). However, in a real market environment, the market itself dictates which revenue management strategy is more appropriate for a given approach, when aiming a more profitable way.

Today, dynamic pricing has become a common practice used by sellers to continuously adjust prices to maximise profits, meeting the consumer's needs according to their willingness to pay. The emerge of the Internet supports real time consumer information, measuring their purchase experience, thus representing an advantage to the dynamic pricing application. This changing environment reflects on companies' needs to change prices and to adjust their inventory with the intend to do it more profitably. This happens in a world of fast driven decisions, in contrast to the past where companies' did not issue new prices all that often.

A purpose of this research is to critically review and analyze the benefits and the impact of dynamic pricing in a certain pricing environment. It adresses the impact of different pricing models, considering consumers perception.

There is not exactly an answer referring to the origins of dynamic pricing form (Bodea and Ferguson, 2014; Elmaghraby and Keskinocak, 2003). Some authors have reported that it was a common practice in the trasportation business in the sixteenth-century (Danish Sound Tolls); in the rates charged for using canals in China, England, and France; and, during the nineteenth century,

in the railway in England and the United States (Fisher and Syed, 2015). However, the modern form of dynamic pricing has been credited to the airlines and hotel industry linked by decisions affected by the demand variability and uncertainty (Talluri and van Ryzin, 2004).

Figure 1-4 presents the major milestones in the development of modern pricing within the hospitality and tourism industry.

Figure 1-4 Milestones of Pricing Innovation
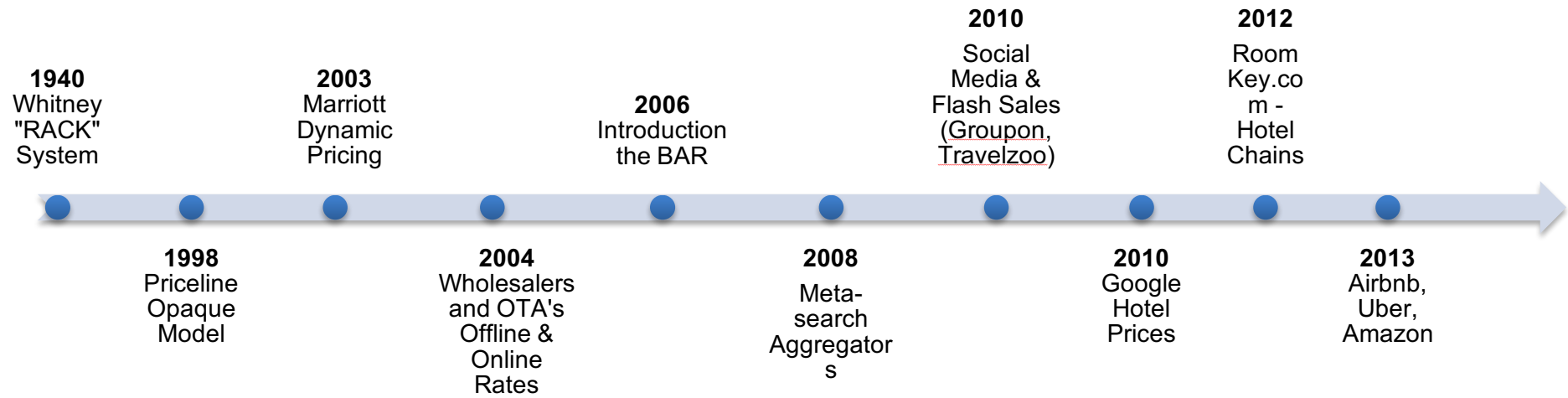
Source: Author

1.4. Aim and Objectives

Pricing in the hotel and tourism industry is a serious issue today, whether it is in the traditional tour operation or in the online travel market (OTAs). Despite the extensive research into revenue management and the interest shown by the various disciplines, i.e. airline revenue management, hotel revenue management, etc., empirical research which examines the impact of dynamic pricing, especially in a business-to-business environment (B2B and C2B) within regards to an online travel agent (OTA) or a wholesaler, is limited.

This thesis provides an empirical study of revenue management and dynamic pricing with an emphasis given to the online travel sector. Considering the extensive research in revenue management in the airline industry, there is limited empirical research, which examines the impact of the buyer-driven pricing mechanisms model, which allows customers to have more impact on the amount they are prepared to pay. The well known model representing this pricing category is the NYOP model (Name-Your-Own-Price). Instead of posting a price, the seller waits for a potential buyer's offer that they can either accept or reject (consumer to business - C2B). This pricing model was successfully introduced to the online travel market in the late 1990s by Priceline.com and has been growing rapidly ever since.

Additionally, this study provides a greater understanding of how the NYOP model can create demand and increase the RevPAR (revenue per available room). Accordingly, hotel revenue managers will be able to use the findings of this study to effectively generate a stronger revenue management performance and potential for their hotel using the NYOP model. Therefore, this thesis contributes to revenue management studies by identifying the effects of increased competition, including the potential impact of increased pricing

competition, initiated by other online travel agents in various forms, i.e. flash sales (large discounts offered for a very limited period of time, i.e. Groupons (daily offers)) or the launching of an 'opaque' travel service by competitors.

Furthermore, this thesis examines and adds new insights to the various pricing models that companies are using in the B2B segment. It examines if the use of dynamic pricing is helping companies to maximize revenue or if the traditional "merchant model" is more efficient.

This study contributes to the current literature on the importance of treating pricing as a process issue; bridges the gap between dynamic pricing and the OTAs environment; and investigates the connection between revenue management and its impact on business relationships. It stimulates creative thinking and provides a theoretical account of the current practice and demonstrates through examples how theory is applicable to current practices.

Finally, this study attempts to provide a comprehensive picture of the impact of the dynamic real time pricing as a whole throughout the decision making process and on consumers' purchasing habits.

The research can be useful to businesses, as empirical data and tests were employed to determine how the different pricing policies impact profit optimization. These practical and theoretical elements of the field reinforce each other. To a large extent, this is what makes the topic exciting. It is this constructive interplay between theory and practice.

The main aim of the research is to examine the consumer's behaviour on willingness to pay (WTP), when using the NYOP model. Moreover, it examines the rationality between the implementation of pricing approaches and the impact on the consumer in an online environment.

This study pursues the following objectives (presented as a summary in Table 1-2):

Objective 1: To examine consumer's behavioural intentions on their willingness to pay (WTP) when using the NYOP method to book a hotel room.

Objective 2: To examine the extent of different perceptions, using the NYOP model, its influence on consumers' overall satisfaction and confidence when they purchase travel products. Including how price factors, reference prices, and the number of bids reflect on utilizing the NYOP model.

Objective 3: To examine whether or not the availability of posted reference prices impacts a consumer's booking patern when using the NYOP model.

Based on the above objectives the following hypotheses are generated:

Hypothesis 1: Satisfaction have a significant positive influence on a consumer motivation to use the NYOP.

Hypothesis 2: Confidence have a significant positive influence on a consumer motivation to use the NYOP.

Hypothesis 3: Experience have a significant influence on a consumer motivation on using the NYOP.

Hypothesis 4: Price bargain have a significant influence on a consumer motivation on using the NYOP.

Hypothesis 5a: When bids are rejected negative emotions have a significant influence on a consumer motivation to use the NYOP model.

Hypothesis 5b: Negative emotions have a significant influence on purchase intention to use the NYOP model.

Hypothesis 6: Consumer motivation have a positive influence on purchase intention to use the NYOP model.

Hypothesis 7a, b, c: There is a significant positive relationship between frequency toward the use of the NYOP model and consumer motivation.

Hypothesis 8a, b, c: There is a significant positive relationship between frequency toward the use of the NYOP model and consumer purchase intention.

Objective 4: To examine to what extent revenue management and dynamic pricing methodologies succeed in the hospitality industry, how they are used, and their behaviour towards the RM framework.

Objective 5: To investigate the impact of dynamic pricing mechanisms used in hotels to model consumer behaviour, creating pricing strategies related to the target market segmentation.

Objective 6: To examine pricing methods used to influence consumers when purchasing a travel product online through online travel intermediaries.

Objective 7: To examine the relationships, how social media used as a distribution channel to encourage consumers to utilize direct bookings through pricing techniques. How this impact revenue strategies and profitability.

To examine the seventh objective, a set of hypotheses is proposed:

Hypothesis 1: there is a positive relationship between social media towards distribution channels use.

Hypothesis 2: there is a positive relationship between distribution channels and dynamic pricing strategies when a revenue manager uses social media to promote dynamic pricing offers.

Hypothesis 3: there is a positive relationship between distribution channels and different pricing approaches when a revenue manager uses social media to promote sales based on different other pricing approaches.

Hypothesis 4a: there is a direct relationship between social media and dynamic pricing.

Hypothesis 4b: there is a direct relationship between social media and pricing techniques.

Table 1-2 Aim, Objectives, and Research Questions

The main aim of the research is to examine the consumer's behaviour on willingness to pay (WTP), when using the NYOP model. Moreover, it examines the rationality between the implementation of pricing approaches and the impact on the consumer in an online environment.

Research Objectives	Research Questions
1. To examine consumer's behavioural intentions on their willingness to pay (WTP) when using the NYOP method to book a hotel room.	• What is the overall experience using a customized pricing? (reverse auction)
	• What demographic characteristics influence consumers' purchase behaviour through the NYOP model.
2. To examine the extent of different perceptions, using the NYOP model, its influence on consumers' overall satisfaction and confidence when they purchase travel products. Examine how price factors, reference prices, and the number of bids reflect on utilizing the NYOP model.	• What is the overall satisfaction gained from using the NYOP model?
	• Is it profitable to restrict consumers to a single bid?
3. To examine whether or not the availability of posted reference prices impacts on consumer's booking pattern when using the NYOP model.	• What benefits and drawbacks do the companies see using the NYOP model?
	• What is the optimal price cutoff in a given scenario?
4. To examine to what extent revenue management and dynamic pricing methodologies succeed in the hospitality industry, how they are used, and their behaviour towards the RM framework.	• What is the goal of pricing and revenue optimization?
	• How do the hotels apply dynamic pricing?
	• How the hotels would choose to distribute their products?
5. To investigate the impact of dynamic pricing mechanisms used in hotels to model consumer behaviour, creating pricing strategies related to target market segmentation.	• How do hotel revenue management and pricing decisions impact consumers booking patterns?

Continued

6. To examine pricing methods used to influence consumers when purchasing a travel product online through online travel intermediaries.	• Is dynamic pricing increasing the consumer's comfort level in booking online?
	• Is any relationship between hotels and the NYOP selling mechanism?

7. To examine the relationships, how social media used as a distribution channel to encourage consumers to utilize direct bookings through pricing techniques. How this impact revenue strategies and profitability.	• How do consumer plan and consume holidays use social media?
	• What is the relationship between social media and dynamic pricing?
	• Is any relationship between SM and alternative pricing methods?

Source: Author

1.5.   Outline of Thesis Chapters

This thesis provides an empirical study of revenue management and pricing with an emphasis given to the hospitality industry. The research examines the implementation of different aspects of pricing and revenue management within the tourism industry investigating the B2B - B2C - C2B models and mainly concentrates on and examines the Name Your Own Price Model (NYOP) or reverse pricing model. The thesis is intended to bridge the gap and cover modern theory and practice. The rationality between the implementation of dynamic pricing approaches within the hospitality - tourism industry and the impact on the consumer.

This thesis is structured into eight chapters including the introduction and the conclusion. The topics of all chapters are interrelated. Each chapter is briefly outlined hereafter.

Chapter 2: Literature Review

Chapter Two puts the research problem into perspective. It sets out a critical review of the existing literature. It discusses the current literature and to what extent it is of interest to the research at hand. Furthermore, the chapter contributes to the theoretical framework of the study. The researcher will present all literature developments with a focus on revenue management, whilst indicating its successful implementation in several industries. The chapter provides an overview of the literature in various fields related to revenue management and dynamic pricing, such as hotel revenue management literature, economic theory, consumer behaviour, marketing, social media & revenue management literature.

Chapter 3: Consumer Behaviour in Online Travelling

Chapter Three discusses the basic theory of consumer behaviour when buying online and how their bargaining power is greatly increased when using the Internet to compare and evaluate products and prices. One established perception is that consumers purchase 'emotionally' and justify 'intellectually' (Baker, 2006:139). The development of the Internet has changed the way consumers behave when planning, booking, and during their holiday, as well as after their holidays, providing feedback on positive and negative experiences. Therefore, while technology has brought choices of information to all travellers, we look at the relationship between the consumer and the online travel agent; the customer perception and acceptance of pricing tactics; the factors influencing the buying decision and the consumer's willingness to pay; and the relationship between revenue management and customer satisfaction, which satisfaction drives loyalty. The chapter concludes by arguing that recent changes in the online travel industry have impacted current consumers' experiences.

Chapter 4: Research Methodology

Chapter Four aims to develop the conceptual framework of this research. This chapter describes the methods and techniques, which are used to examine the aims and objectives of the research, as well as the context within this research that will be undertaken. The chapter explains the survey methodology and hypotheses, which were called to answer the research questions outlined in the first chapter in detail. It presents all methods used to investigate dynamic pricing and the impact of the Name Your Own Price model in the service industry. Furthermore, it discusses the data collection, which, due to limiting assumptions

may restrict their applicability. Moreover, 'real-time' data associated with inside business areas can be a challenging and complex assignment. Based on the above, three interrelated studies have been conducted through online surveys, sent to hotel and travel industry executives in order to test the research hypotheses. The first structural survey (NYOP) provides a better understanding of the final consumer, whilst using the name-your-own-price mechanism and the extended role of social media in the booking procedure. Finally, the chapter provides a detailed explanation of the proposed data collection process, the response rate, the validation process, and the study analysis.

Chapter 5: Pricing Models - the 'Name Your Own Price' Model

Chapter Five aims to present the results from the first study, which was the acceptance and impact of the reference prices on consumers, when using the Name–Your–Own-Price model (NYOP). It analyses the Name-Your-Own-Price (NYOP) model. A representative of this pricing category is Priceline.com, an opaque channel. It has rapidly become a familiar business model in e-commerce. Within this system, a buyer-driven mechanism, buyers, rather than sellers, suggest a price for a product, with a transaction occurring only if a seller is willing to accept the quoted price as similarly done in an auction. In return, consumers agree to various degrees of flexibility in the brand and product features they receive for their offered price. The chapter researchers the first three objectives and examines consumer perception using the above model and how the price factors, and the number of bids, reflect on using the model. In doing so, this chapter concludes with the results on how the NYOP model can create demand and increase the RevPAR (revenue per available room).

Chapter 6: Revenue Management and Pricing Models in Hotels

Chapter Six discusses the use and application of dynamic pricing in an online environment. The chapter examines the fourth, fifth, and sixth objectives. It provides a critical analysis of the different pricing models and practices utilized in Revenue Management. In so doing it examines and presents a theoretical framework of revenue management and the significant role that pricing plays. It looks at the systems used in this challenging practice of obtaining the highest revenue from selling one's capacity. Furthermore, it provides an analysis on how the OTAs use the dynamic pricing models and which pricing strategies the competition incorporates. It compares pricing performance against the traditional static systems.

Chapter 7: Revenue Management and Pricing - Social Media

Chapter Seven presents the growing impact and the central role social media plays in the tourism industry. It describes how social media revolutionized the way by which tourists buy and sell and the implementation of social media when pricing services in the tourism industry, which presents the seventh objective of this research. The consumer occupies a position of control, as they dictate the way of pricing. The researcher discusses the revenue management opportunities; the use and the role of social media for real-time two-way communication with consumers; and the ways social media application can leverage profit maximization.

Chapter 8: Conclusion

Chapter Eight summarizes the main findings of the study and debates the questions and objectives. It analyses the theoretical and empirical contribution

made to literature in relation to the analytical modelling of the NYOP model. It presents the main limitations of the research, addresses some of the ethical issues and possible problems. It provides directions and suggestions for future further development and theoretical or practical studies in the area of revenue management in B2B - B2C - C2B relationships.

This chapter presents the theoretical background for the thesis. It addresses the purpose and the research objectives of the study. This research uses various methods to examine the objectives.

2. LITERATURE REVIEW

2.1 Introduction

This chapter sets out a critical review of the existing literature. It discusses the current literature and the extent it helps informs the research aims. Furthermore, the chapter contributes to the theoretical framework of the study. The researcher will present all literature developments with a focus on revenue management, whilst indicating its successful implementation in several industries. It will give an overview of the literature in various fields related to revenue management and dynamic pricing such as hotel revenue management literature, economic theory, consumer behaviour, marketing, social media & revenue management literature.

Revenue management started as a desperate strategy for struggling carriers faced with new competition from the low cost carriers as a result of deregulation (Cross, Higbie, and Cross, 2011). Previously, deregulation carriers were not focused on the 'consumer surplus' (Cross *et al.,* 2011), the gap between a consumer's value perception and the seller's value perception (Parkin, Powell, and Matthews, 2005:101). The lost profit opportunity was not captured. According to Cross *et al.* (2011) revenue management is an understanding of consumer perception of service value and precisely aligning prices, allocation and availability for each market segment.

It has been defined since the beginning, that revenue management mainly addresses demand decisions application in business practice (Bernstein and Vulcano 2007). The two commonly used techniques are inventory allocation and dynamic pricing (McGill and van Ryzin 1999), to this end however, list pricing is still the most utilized pricing mechanism (Caldentey and Vulcano

2007). Nowadays, online auctions are a new mechanism allowing consumers to determine their willingness to pay, which has a significant impact on the consumer's buying behaviour. According to Caldentey and Vulcano (2007), this should be carefully measured and evaluated by the supplier when designing the online auction mechanism.

The aim of this chapter is to introduce the thesis into topics related to revenue management and dynamic pricing for the hospitality and tourism industry. Pricing decisions have a direct effect on profitability. The researcher has been interested in analysing the impact of the NYOP model in the service industry and in a competitive market. Very little literature is available that is directly applicable to the NYOP model from the hotel side of view, including market-side issues like consumer comfort using the bidding mechanism. These are, however, important characteristics of industries where opaque selling is being applied. Existing literature tends to concentrate on the NYOP model as an operation research (O/R) model, mainly discussed from the provider side, with considerable emphasis on supply-side issues like competition, dual distribution channel management, or inventory availability as an O/R mathematical model.

In Section 2.2, the chapter provides an overview of revenue management literature, starting from the historical point of view, the first recognized innovation in revenue management and how the discussion over time has moved to today's implementation and practice in to several industries. While in Section 2.3 discusses in detail the name-your-own-price (NYOP) model. This is a pricing mechanism were the traditional pricing role is reversed, therefore, the consumer proposes a price that they are willing to pay, whilst the seller (supplier) decides whether to accept or reject the consumer's proposed price (offer). At the same time, the consumer accepts an *opaque* product sale and will

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not be able to learn the exact details of the product or service until the transaction is finalized (Fay, 2008; Anderson, 2008). In Section 2.4, the researcher provides a comprehensive study of the dynamic pricing approach as a broad field of revenue management. The purpose is to briefly present several approaches to dynamic pricing, based on the fundamental principles of price discrimination and market segmentation. Both principles are based on the economic theory. The contrast between traditional pricing methods were mainly based in quantity control and fixed set of prices, whilst in dynamic pricing the price changes were based on several factors (hotel occupancy, length of stay, days before arrival, etc.) considering demand, consumer willingness-to-pay and competition. Next in Section 2.5, the researcher discusses the impact of the Internet, which has changed the distribution channel's environment, creating a competitive landscape with online travel agencies. It has been a remarkable growth for the online bookings system. The industry faces pricing transparency, thus finally the consumer is in control. Price transparency has elevated the importance of effective price optimization. Section 2.6 discusses the impact of marketing in revenue management and introduces the most important topics of marketing focused on pricing and market segmentation. The marketing function controls the pricing decision and market segmentation as a structured process on the company's strategy. Hotel managers should utilize information in order to price the rooms and create effective marketing strategies. Section 2.7 presents the objectives, questions and their proposed hypothesised relationships. Finally, Section 2.8 concludes and is a summary of the framework, which develops relationships between the different elements of revenue management. In conjunction, the conceptual revenue management infrastructure influences the research and the discussions in subsequent chapters.

2.2   Revenue Management

Revenue Management (RM) in the hotel industry has been recognised as an important tool for demand management. The history of revenue management demonstrates an e-commerce model of dynamic, automated sales empowered by central reservation and revenue management systems (Boyd, 2003). Revenue management (RM) has gained attention mainly as an application of the operations research (OR) area with the influential papers of Belobaba (1987a, b, 1989). At the same time, an extensive body of academic and industry research on different areas and applications of RM has grown. Since then, the operations research literature mainly focuses on strategic issues such as forecasting, booking limit, dynamic pricing, or overbooking (Talluri and van Ryzin 2004). Moreover, advances in the Internet and information technology have allowed revenue management implementation to become more efficient with improved capabilities (Ng, 2007; Chiang, Chen, and Xu, 2007).

The initial development of revenue management was during the early 1970s with the offering of differentiated fares for the same seats and is due to Littlewood (Littlewood rule, 1972). In 1972, British Overseas Airways Corporation (BOAC – now British Airways) offered two seat classes, structured 'Earlybird' discounts model and full-price that have prices p_1 and p_2 respectively, with $p_1 > p_2$ (Cross *et al.*, 2011; McGill and van Ryzin, 1999), however the first milestone occurred at American Airlines in 1978 after the deregulation of airlines. Marriott hotels were the pioneers adopting the practice of revenue management in the hospitality industry (mid-1990s), incorporated into their marketing strategy (Cross, 1997), although the application was not straightforward due to the levels of responsibility between different hotels (Cross *et al.*, 2011). Therefore, the system has been developed with variable

adaption, mainly how to forecast and optimize room availability by price and length of stay, using 'fenced rate' (Cross *et al.,* 2011). The success at Marriott hotels followed by implementation of the concept by other hotel chains and related service industries such as restaurants, cruise lines, golf courses, and railways, etc. moreover, saved National Car Rental from bankruptcy, saving 7500 jobs (Kimes, 2003). Nowadays, revenue management has been successfully implemented to sport and entertainment industries, theatres, operas, and concerts offering differentiated pricing based on consumer segments (Talluri and van Ryzin, 2004).

Phillips (2005:120) argues that revenue management is a strategic process of maximizing revenue from managing existing allocation or capacity through an implementation of different rates over time. Therefore, revenue management framework is based on dynamic pricing approaches with constrained supply (McGill and van Ryzin, 1999). In general terms, the early literature in revenue management concentrated on the overbooking problem or control of inventory allocation in hotels and airlines (Rothstein, 1971; 1974; 1985, Littlewood, 1972). Hence, a common assumption in the hotel industry is that each consumer who has reserved a room can cancel anytime before the arrival date, therefore, the hotel manager has to decide whether or not to accept a reservation through another distribution channel or a walk-in consumer showing up at the hotel front office without a reservation. Additional reservation acceptance leads to the overbooking problem. To optimize the problem faced by the hotel manager, Badinelli (2000) presents a dynamic model for finding optimal booking policies following an introduction of price constraints and creating multiple room types. In their work, Bitran and Gilbert (1996) concentrate on this specific issue, taking in to consideration how feasible it is to simultaneously manage the room

allocation (capacity) on the booking day. Talluri and van Ryzin (2004:4) added to the above, that revenue management addresses this demand decision to three categories 'structural, pricing and quantity decisions'. Moreover, the timescale of the decisions varies as well. The authors categorize revenue management to quantity-based RM or price-based RM. The quantity based revenue management is concerned with inventory control management, which has the potential to maximize expected revenues, as a tactical component of RM (Belobaba, 1989).

According to Phillips (2005:120), revenue management is applicable when a business has a fixed capacity of perishable capacity (fixed amount of rooms to sell), demand can be segmented into classes (consumers are willing to pay a different price for the same room), the product can be sold well in advance, there can be substantial fluctuations in demand, consumers can buy through a variety of "channels" that may or may not be "direct" and that variable costs are much less than fixed costs (Kimes, 2009:477). The efficient implementation of other industries depends on various combinations of duration control and variable pricing within the industry (Kimes and Chase, 1998).

There are generally a large number of formulations, however, researchers have asserted that there is still not an exact definition (Weatherford and Bodily, 1992). In the present study, the researcher believes that 'Revenue Management is a scientific approach, which allows companies to optimize their inventory, prices and channels in order to improve profitability'.

Therefore, anyone looking for a definition of revenue management will find a range of definitions. Table 2.1 illustrates the most well-known definitions covering the entire spectrum from airlines to hospitality.

Table 2-1 Definitions of Revenue Management

Scholars	Definitions
Cross (1987)	'Selling the right seats to the right customers at the right prices and the right time' (American Airlines 1987)
Pfeifer (1989)	Yield management is a process by which discount fares are allocated to scheduled flights for the purpose of balancing demand and increasing revenues.
Nykiel (1989)	Yield management is charging a different rate for the same service to a different individual.
Gallego and van Ryzin (1994)	Yield Management is an attempt to 'synthesize' a range of optimal prices from a small, static set of prices in response to a shifting demand function
Cross (1995)	Revenue management is a management process that employs skilled market analysts who use rocket-science mathematical concepts, in a high-powered computational environment to analyse gigabytes of marketing data, in order to capture revenue opportunity.
Donagly *et al*. (1997)	Yield management is a revenue maximization tool, which aims to increase net yield through the predicted allocation of available bedroom capacity to predetermined market segments.
Kimes (2000)	Yield management is a method which can help a firm sell the right inventory unit to the right type of customer, at the right time, and for the right price. Yield management guides the decision of how to allocate undifferentiated units of capacity in such a way as to maximize profit or revenue.
Boyd (2002)	Revenue management is the science of maximizing profits through market demand forecasting and the mathematical optimization of pricing and inventory.
Talluri and van Ryzing (2004)	Revenue Management is concerned with such demand - management decisions and the methodology and systems required to make them. It involves managing the firm's 'interface with the market' as it were – with the objective of increasing revenues.

Source: Author

Phillips (2005:123) discusses that companies implementing revenue management involves of paying attention to consumer segments, forecasting future demand, having different pricing approaches and updating the strategy according to changes in consumer demand. Therefore, the objective of revenue management is to maximize revenues and generate profit, using different techniques over the long-term strategic approach.

Kimes (2003) indicates that, revenue management research is divided into three streams: descriptive (application to industry), pricing control (development and improvement of pricing strategies) and inventory control (management of arrivals through observation of consumer patterns).

According to Phillips (2005), the application of revenue management is referable using new techniques and models to maximize the total contribution, which reflects the way a company is doing business, the business goals and finally the approach of consistent management decisions. Airlines, hotels, travel agencies - online travel agencies (OTA), and car rental industries have implemented the application of revenue management. The researcher in this study concentrates on the implementation and use of revenue management in hotels and online travel agencies.

Cross, Higbie and D. Cross (2009) refer that revenue management has progressed beyond historical data and inventory control, hence a shift from tactical focus to a strategic focus. The hallmark of revenue management strategy is to understand consumer behaviour, focus on pricing so you cost effectively, position competitively and fill the reservation pipeline with specific prices and length of stay to generate the highest-value business (Noone, Canina, and Enz, 2013).

The study by Canina and Enz (2006) shows that the implementation of revenue management is a valuable and effective approach. Hotels applying rate-to-demand revenue management perform better that their competitors. Furthermore, hotels that price higher that their competitors examine growth in RevPAR than the hotels that price below their competitors.

The paper by Rohlfs and Kimes (2007), examined customer's perception of the fairness, acceptability reasonableness and honesty of the best available rates (BAR) offered to consumers. Instead of paying the same price for each room-night, consumers would pay different prices for each night. Revenue management has been recognized and used in the hotel industry however, another key aspect important to RM is consumer segmentation, meaning that each consumer is not treated equally. As a result, consumers will pay different rates moreover, hotel nightly rates have been transparent and consumers expect that the hotel would guarantee them the best available rates. The authors find that consumers preferred to be quoted individual rates so that they know the rate is the lowest available.

Talluri (2012:660) discusses the role of daily revenue management operations, which, are to 'monitor demand, competitor actions and adjust forecasts, and set controls' that open or close the inventory allocation for a specific day. Nowadays, consumers have the possibility of shopping around and knowing all competitive rates therefore, rate transparency has increased the importance of price optimization based on consumer price elasticity measures (Cross, Higbi, and Cross, 2009).

The paper by Hoseason and Johns (1998) is one of the first works to discuss the role of yield management in the tour operations business. Although tour operations share a number of revenue management characteristic similar to

other services industries (a) perishability, (b) high degree of service intangibility, (c) high degree of customer specificity, (d) consumption and production simultaneous and inseparable, they have been less forthcoming.

As Anderson and Xie (2010) point out tour operators have to operate and manage two types of room contracts. A guarantee contract that blocks a specific amount of room for a period and involving financial risk if the tour operator does not sell off the rooms, and one involving no financial risk as the contracted room allocation could be realised some days before arrival. Therefore, tour operators must handle different types of inventory at the same time, which makes it an enormous complexity (Schnetzer, Becker, and Burmann, 2010). Furthermore, a tour operator serves charter or scheduled flights from an incredible number of departure airports, throughout a year, with thousands of accommodation types.

According to Hoseason and Johns (1998), mass-market tour operators although enjoying freedom to manipulate capacity to match demand, which requires good forecasting and management by objectives, may unintentionally destabilise the product and its profitability. Finally, the authors find that mass-market tour operators make use of predatory pricing and marketing tactics to gain market share, however, ignore the product profitability. Tour operators are using tactical pricing such as discounts to enhance early sales or late deals in order to clear left capacity although, consumers have anticipated these tactical practices.

Gallego and Phillips (2004) introduced the flexible product concept for revenue management. This type of product is a set of two or more alternative products offered by the supplier serving the same market. Flexible products revenue management models are applicable in travel when the tour operators sell packages and specifically when a tour operator is selling unspecified

accommodation as a component of the package. The tour operator offering flexible product guarantees a service to the consumer, and the consumer can specify a type of service such as a resort area, accommodation type, accommodation standards however, will only assign a specific hotel to the consumer at a later date. The tour operator is therefore using revenue management models to allocate the consumer to a specific property according to whichever property will maximize profitability.

As Cross *et al.,* (2011) note, to date revenue management and pricing optimization applications have been efficient in maximizing revenue on a case-by-case approach. Any additional increase in average daily rate (ADR) achieved at which the room is sold contributes to the profitability of the hotel. Finally this improvement will add to the hotel profitability from operations to the hotel earnings before interest, taxes, depreciation, and amortization (EBITDA). Moreover, Russo (1991) examines the concept of variance analysis in an approach to explain the impact of price changes at a hotel. He compares actual results with expected outcomes from the changes on the demand and price mix. The next step for revenue management is to understand the long-term revenue perspective based on total consumer contribution for a potential profit to follow.

2.3   Name-Your-Own-Price (NYOP) model

The emergence and growth of the Internet has created various innovative pricing mechanisms. A representation of this pricing category is the name-your-own-price (NYOP) mechanism. In a NYOP model, the consumer has more impact on the amount they want to pay and determines the price. Consumers want to pay a price, which reflects the product value (Nagle and Holden, 2002:8). The supplier can either accept or reject the offer. The supplier sets a lowest acceptable price, a 'threshold price'. A consumer bidding should at least equal the supplier's threshold price; it is only then that the sale takes place (Bernhardt and Spann, 2010). Therefore, if the consumer' bid is higher than the threshold price (r), the mechanism will accept the offer and retain the difference as profit (consumer bid minus threshold price) hence, a customer's bid (b) for the opaque product is successful if **b >= r.** According to Badinelli and Olsen (1990), this threshold price is defined as the 'hidden price' (HP) case. If the quoted rate is lower than the rate the 'caller' (consumer) is willing to pay, then the transaction is made, hence making the resulting transaction a probabilistic event. Weatherford and Bodily (1992) also examined the hidden price (HP) consumer behaviour using the threshold prices model. Therefore, to evaluate such a mechanism, an understanding of user behaviour is crucial (Ding *et al.*, 2005:352). This mechanism is also referred as reverse pricing (Chernev 2003; Shapiro and Zillante 2008) because, instead of the supplier as in a traditional approach, here the consumer sets a price and the suppliers act as if they are bidding for the consumer's business (Ding *et al.*, 2005:352). The model was pioneered through Priceline.com and is where consumers use a bidding approach to purchase a product such as airline tickets or hotel rooms (Spann and Tellis, 2006). One of the features of the NYOP model is that consumers

purchasing through NYOP model can state a personal flexibility (Spann *et al.*, 2004:23). The consumer will only learn the name and details of the product purchased after the deal is finalized (Huang, 2011), in contrary to the posted prices and product information therefore, have been referred as "opaque" selling (Fay, 2004). An important implication is that the consumer using the Priceline.com model is mainly restricted to a single bid within a certain period of time (Terwiesch *et al.*, 2005:340) however, other providers using a NYOP mechanism allows consumers to rebid immediately (Spann *et al.*, 2004:23). This two-fold possibility leads to an understanding of consumers' bidding behaviour, which is important for NYOP providers to optimize the model and rate structure (Hann and Terwiesch, 2003).

For this study, the researcher asserted this distinction, therefore, has requested from the survey participants to determine who has placed more than one bid. This substantial consumer behaviour information leads to emphasize consumer willingness-to-pay thus, an indication of the company pricing strategy. Within this context, Span and Tellis (2006), have studied the optimal bidding mechanism and compared bidding behaviour for single or multiple biddings and profit maximization. Thereby, information about consumer behaviour like the willingness-to-pay (WTP) provides an understanding, which serves to evaluate optimal pricing structures and allow suppliers to obtain a higher consumer surplus (Spann *et al.*, 2004). In that sense, Spann and Tellis (2006) employed Name-Your-Own-Price to ascertain the extent consumer behaviour is rational in relation to the bidding model.

Hann and Terwiesch (2003) examined empirically the consumers repeated bidding behaviour. They presented a microeconomic model to measure

frictional costs when the consumer submits only one bidding offer hence, explaining consumer behaviour.

Consequently, Spann, *et al*. (2004) have developed, using an empirical test, a model for consumer bidding behaviour. The model estimated consumer willingness-to-pay based on bidding behaviour and the related incremental costs. The test has been based on two model possibilities, i.e. the single bid model and the repeated bidding model. Furthermore, Spann *et al.,* (2004) derived optimal bids, based on observed willingness-to-pay of participating bidders. At the end, the authors concluded that the results show that the supplier should permit multiple bidding to further increase profit by price discrimination.

Chernev (2003) debates in his work two price elicitation strategies, namely the name-your-own-price mechanism and price selection strategy. He analyses the consumers' preferences in an online 'reverse pricing scenario' using a series of three experiments. Therefore, he compares the two elicitation procedures and examines whether the consumer prefers the price generation (NYOP), and allowed consumers to articulate their willingness to pay or price selection as the consumers choose from a range of reference prices presented to them to select one. Chernev (2003) concludes that consumers prefer the price selection list, which is more restrictive on their willingness to pay.

In contrast, Fay (2004) has focused on a partial-repeat-bidding approach in a NYOP model. He developed an analytical model to optimally measure the companies expected profit under some restrictions. The possible number of bids was manipulating the bidding procedure to a single bid or to allow sophisticated consumer users to repeat bids applying various types of 'camouflaging' such as the use of different credit cards, alternative e-mail

address, etc., in case the previous offer was rejected. Finally, Fay (2004) concludes that either policy is equally good. He found that either approaches, a single bid or repeated bid, result the same profit yield. However, some reservations concerning the implementation of the bidding procedures should be considered. Shapiro and Zillante (2008) works aid the above results. The authors have concluded that selling opaque using the NYOP mechanism increases profit and consumer surplus. Moreover, the authors conclude that using a NYOP model with posted prices (hotwire.com) there is no significant change in profit, unless the company's marginal cost is limited, therefore, the accepted bid is near the marginal cost and constant to threshold price of the seller.

Huang and Sosic (2009) work in contrary debates that suppliers may not benefit from the existence of the NYOP channel. The authors have modeled the sale of products through a direct channel with posted prices and the sale through the channel of the NYOP model as opaque selling. The authors found that high-end consumers may demonstrate low-end behaviour. According to the author's paper experiments, suppliers are able to generate higher profits using the posted prices approach in the absence of the NYOP channel.

Additionally, the work of Terwiesch, *et al.* (2005) developed a model, which enhanced the decision that the NYOP provider should set the threshold price optimally. Their work was built on transaction data of a large NYOP retailer. The authors finally showed that the model allows an engagement in enhancing market segmentation, so the retailer is able to engage in price discrimination within the consumer's segment.

Hann, Hinz and Spann (2006) developed two models to compare the outcomes for NYOP with a fixed threshold price and a NYOP with an adaptive threshold

price. The authors observed a significant change in consumer bidding behaviour and found that the adaptive threshold price approach allows the NYOP seller to achieve additional profits. This could be the foundation of surplus profit and welfare for NYOP sellers, but also diminish consumer's irrational behaviour.

Shapiro and Shi, (2008:803) argued that the model enables OTAs with the opaque selling feature to 'price discriminate between those consumers who are sensitive to service characteristics and those who are not'. Therefore, OTAs can profit from such discrimination as the model is used to target consumers' sensitive to price, however are less concerned about the product differentiation. Furthermore, Tremblay *et al.* (2012:277) identified that according to the 'principle of product differentiation, price competition diminishes as product differentiation increases'. In a NYOP, bidding prices are unknown to consumers, which makes consumers bid against the seller instead of one another (Chernev, 2003:52), therefore, companies selling opaque can control demand and offer capacity without jeopardizing the brand and pricing policies from other distribution channels using discount rates (Terwiesch *et al.* 2005; Shapiro and Zillante 2008). Moreover, Wang, Gal-Or and Chatterjee (2009) state that product distribution through the NYOP channel demands the existence of dynamics that offset the 'adverse consequences of cannibalization of sales through traditional posted-price channels'. In this sense, the NYOP model providers can profit from unsold capacity moreover, generate incremental revenue. To this end, Tremblay *et al*. (2012:277) argued that in the Bertrand model of selling goods, 'each company chooses its price to maximize profits, given the price of its competitors'. In this situation, each company 'will undercut the price of the competitors until the competitive price is achieved'. Samuelson

(2010:193) added that competition creates strategic considerations into the market moreover, forces companies' reaction to competitors' 'price and output decisions'. Shapiro and Shi (2008:805) added that products sold through Priceline are 'indistinguishable for customers and become essentially perfect substitutes', which leads to Bertrand competition that gives competitive outcomes that: (1) there is competition over prices and (2) product offer follows the realization of demand (Kreps and Scheinkman, 1983).

Ding, Eliashberg, Huber and Saini (2005) address the impact of the bidding procedure to the consumer. The authors have developed a test to examine the 'role emotions play in considering the actual bid submitted'. They measure the consumer frustration in the case of a rejected bid and an expected excitement in the case of a winning bid. Moreover, how the emotional aspects of this dynamic bidding nature can have an influence on consumer future bidding behaviour. The authors concluded that there is a strong emotional effect associated with bidding and change according to the previous bidding result. The aim of this research refers to analysing the use and consumer comfort of the NYOP model and its place in a competitive market.

Hinz and Spann (2007) developed a model to analyse the impact of information diffusion among bidders in the NYOP model and some variants of Internet auctions. Hence, the authors empirically tested the implications and examined the effect of shared information on individual bidding behaviour, since the bidders rely on their social network of friends or other users to learn more about the minimum auction price that has to be reserved by a consumer for a successful purchase. The authors found that the social network context had a significant impact on the consumers bidding behaviour for the NYOP providers.

Suter and Hardesty (2005) examined the relationship between the starting minimum threshold prices on a seller's earnings. Moreover, these authors evaluated consumer perceptions of price fairness of NYOP sellers hence, higher starting bids might result in consumers' perception of price unfairness with an effect of losing bidders. Finally, the authors' work indicates that increasing starting bids, as the number of bidders increase, led to higher seller of earnings furthermore, no adverse perceptions of price fairness due to setting the starting bids price higher.

In contrast to the above, the work of Jang and Lee (2013) identifies the reaction of the consumers subjected to an unfair pricing practice was that they would avoid using the NYOP method despite the lower transaction value. The authors' concluded that a significant percentage of consumers (30%) prefer to avoid a hotel using the NYOP model. Moreover, consumer perception is shared by a third person, generating a negative effect.

Finally, the work of Hinz, *et al.* (2011) disclosed that suppliers are extremely aware of the 'potential increase in profits that would accompany an adaptive threshold price policy'. Since Priceline.com pioneered the NYOP mechanism and became the largest OTA; moreover, a number of companies employed the model such as Expedia (Hotwire.com) and several low budget airlines (i.e. Germanwings). The success of Priceline indicates the acceptance of the NYOP mechanism however, only in the travel industry. According to Wang, *et al.* (2009) work, Priceline has implemented the NYOP model in a variety of services or businesses with perishable products with limited achievements. The authors conclude that within the travel industry the market segment widely differentiates therefore, there is a market segment with high willingness to pay, that generate late bookings and whose size is uncertain.

2.4   Dynamic Pricing

According to economist Deirdre McCloskey '*the theory of price is one among the larger intellectual achievements of the nineteenth century, [.....] Price theory explains much human behaviour*' (McCloskey, 1985:4).

The economist Paul Krugman explains that dynamic pricing is not a new pricing approach. It is a new version of an old practice of price discrimination (Krugman, 2000) used in economics. When the sellers segment consumers, they could identify similar consumers based on their willingness-to-pay. The new technology landscape allows e-commerce to tailor the prices according to consumer search habits and offered acceptable price discrimination using a dynamic pricing approach. If the consumer looks price sensitive, they pay less than other consumers who are less price sensitive. Consumers are myopic therefore, they purchase a product or service as soon as the price is less than they are prepared to pay. Phillips (2005:15) refers this price differentiation as 'at the core of pricing and revenue optimization'. Therefore, price differentiation or customization has become a key component of a pricing strategy. Dynamic pricing includes two basics (a) price dispersion, and (b) price discrimination (Dana, 1999a,b).

To apply a price discrimination pricing policy, a company should have near monopoly power over the supply of the product or service. Therefore, under a perfect competition environment, a company has no power to set prices, otherwise it will lose all demand to the competition (Talluri and van Ryzin, 2004:354). Pigou (1920) established the economic theoretic framework and classified three types of price discrimination based on the degree of information required for implementation (Armstrong, 2006). He classifies price

discrimination to (a) first degree (or perfect) price discrimination, (b) second degree price discrimination, and (c) third degree price discrimination. Figure 2-1 shows an example of a discrimination pricing policy a linear demand curve.

Figure 2-1 Revenue from selling hotel rooms at a (i) a single price and at (ii) three different prices to different consumers.

(i) (ii)
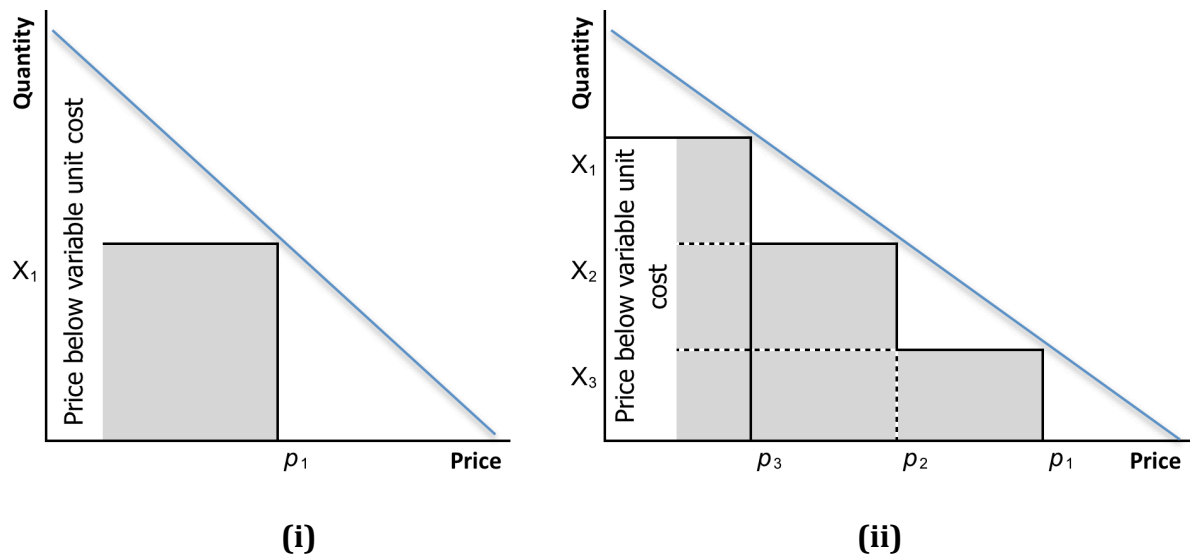
Source: Adapted from Talluri and van Ryzin (2004)

In Figure 2-1(i), the shaded triangle shows the maximum revenue obtained when the seller charges a single price. This optimal output is located at the intersection of the variable cost (VC) and p_1, which represents the maximum revenue price.

In Figure 2-1(ii), the shaded area shows the maximum revenue that the seller is obtained if the seller is able to charge every consumer the amount at his willingness to pay. The total revenue increases between the price segments. In this situation, the seller divides the consumers into several classes with different price sensitivities hence the seller offers multiple prices for the same product, $p1 \geq p2 \geq p3$. The consumer according to his segment will pay the price they

are willing to pay. This is known as third degree price discrimination in economic theory.

Price discrimination is widely used today in the hospitality and tourism industry. Hotels divide consumers in to different market segments and price the same room differently according to several factors including: demand, length of stay, period of the booking and days before arrival, and those who are business or leisure travellers. This price distribution enables them to maximize optimal consumer surplus, and hotel occupancy with the intention to further increase hotel profit. Price discrimination can lead to efficient pricing (Armstrong, 2006:100).

According to Reinartz (2001), economists view consumer's willingness-to-pay as first-degree price discrimination 'the ultimate discriminatory variable'. However, theoretically in economic terms when companies have market power the willingness-to-pay pricing approach can maximize company profits (Armstrong and Vickers, 1999). Moreover, Samuelson and Nordhaus (2010) add that the economic effect of price discrimination often improves economic welfare. It provides both eager and reluctant buyers to capture the best available price according to their willingness to pay, thus creates consumer satisfaction.

The paper by Elmaghraby and Keskinocak (2003) refers that pricing methods mainly fall into two broad categories: under a posted price mechanism where the consumer has to accept a take-it-or-leave-it price determined by the seller, and price discovery mechanism where the prices are determined via a bidding process were the consumer determines his/her willingness to pay. Posted prices are also dynamic where the seller changes the set of prices dynamically several times over a period based on a balance of supply and demand.

Table 2.2 illustrates the most well known dynamic pricing definitions covering the entire spectrum from the airline industry to the hospitality industry.

Table 2-2 Definitions of Dynamic Pricing

Scholars	Definitions
Gallego and van Ryzin (1994)	Given an initial inventory of items and a finite horizon over which sales are allowed, we are concerned with the tactical problem of dynamically pricing the items to maximize the total expected revenue.
Kambil and Agrawal (2001)	Dynamic pricing – a business strategy in which prices are varied frequently by channel, product, customer and time.
Reinartz (2002)	Dynamic pricing is the dynamic adjustment of prices to consumers depending on the value these customers attribute to a good. Underlying the concept of dynamic pricing is price customization that charging of different prices to end consumers based on a discriminatory variable.
Bitran and Caldentey (2003)	The problem faced by a seller who owns a fixed and perishable set of resources that are sold to a price sensitive population of buyers. In this framework, where capacity is fixed, the seller is mainly interested in finding an optimal pricing strategy that maximizes the revenue collected over the selling horizon.
Biller *et al*. (2005)	We define [Dynamic Pricing] as changing prices over time without necessarily distinguishing between different types of customers

Source: Author

According to Popescu and Wu (2007) in practice within the industry, pricing is based on empirically demand models, that a consumers purchase decisions response 'conditional on current prices only' posted by the seller, corresponding that companies follow 'myopic pricing policies' (Bitran and Caldentey, 2003).

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Talluri and van Ryzin (2004:182) continues that dynamic pricing problems in practice should consider some further factors such as how the consumer behaves over time, the influence factors have behind the purchase decision, and the competition otherwise market conditions.

Gallego and van Ryzin (1994; 1997) examine the 'dynamically pricing products' approach and 'optimal pricing decision situation' over a given time so that the company can maximize revenue. Therefore, the prices will have to be adjusted based on mathematical models, to develop the benefits of dynamic pricing, furthermore to decrease simultaneously demand and increasing revenue.

Koenig and Meissner (2010) work examine the difference between a company using a dynamic pricing policy and a list-price capacity control policy in which circumstances the one method might be favourable against the other. The authors consider a problem where they investigate what percentage of revenue a company risks using static pricing for control of capacity allocation instead using a continuous dynamic pricing approach. The authors have used experiments with these two different pricing policies and then compared the achieved revenue from both policies. The authors found that when a substantial capacity is in place in relation to demand, the expected revenue risk utilizing static prices is slightly higher than using the dynamic pricing policy.

Bitran and Caldentey (2003) investigate a problem faced by a seller who owns a fixed and perishable inventory that is sold to price sensitive consumers. The authors developed a model to examine an optimal pricing strategy, which will maximize the revenue over a selling period.

Similarly, Osadchiy and Vulcano (2010) examine the use of markdown pricing where the price of a product or service is consecutively decreased until either it

sells or a selling period expires. According to the authors, this dynamic pricing policy is effective for consumers who are willing to pay more and arrive early in the sales and those who are price sensitive and wait to purchase in order to save money. It helps companies to clear inventory before it becomes distressed.

Reinartz (2002) argues that for dynamic pricing to work, it must hold perceived fairness. Companies should pay attention to the risk otherwise it will cannibalize their pricing strategy. Moreover, dynamic pricing is more feasible when a product or service is mainly perishable hence limited in supply. Therefore, the company has the opportunity to apply different rate fences to restrict the consumers' attributes, thus the consumer perceives the price to be fair. Similarly, consumers compare actual prices offered with reference prices.

Tso and Law (2005) found a significant difference in the average room rate (ADR) a consumer has to pay to obtain the same service amongst different distribution channels. Their work results show that the lowest rates have been offered by the website of a local travel agency on all distribution channels.

Another way to avoid the perceived fairness even when the product or service is not limited in supply is to keep the purchase transaction between the seller and the buyer undisclosed such as in Priceline.com where only the consumer and seller knows the transaction value. Another approach is to offer the service or product for a limited time to make it available as 'flash sales'.

According to Bodea and Fegruson (2014) in order to avoid perceived fairness, airlines and hotels are using aggregators such as OTA's (example trivago.com, Kayak.com) or opaque channels (example Priceline.com, Hotwire.com) to distribute and clear excess inventory instead of their own website. Through this

way, hotels and airlines avoid market cannibalization that destroys their brand value moreover, consumers continue to book for a product or service and are charged regular prices without feeling abused.

A prerequisite to apply revenue management is the understanding of the economic theory, mainly elasticity of demand, competition and cost behaviour. Dana (1999) work discusses how companies can use revenue management methods, in practice using price dispersion at peak times that can shift demand to off-peak times as well as to reduce costs. The author concludes that if the company is setting multiple prices and restricting availability at lower rates, this will shift demand from high-booked periods to low booked periods even if the company is not aware when the high demand period will occur. This model demonstrates the uncertainty regarding a consumer's booking demand preferences.

Van Ryzin (2012:340) suggests that demand models are important for pricing and optimization. He continues that a model of demand is the 'heart' of revenue management moreover, behavioural economic consumer models increase the scope of demand models and will drive the need of optimization models.

Edgar (2000) discusses economic theory underlying the concept of revenue management. He explains the components of demand, supply, cost and price using a pricing decision framework incorporated into the hospitality and tourism industry.

Talluri and van Ryzin (2004:334) look at a revenue management context where there are many economic forces implemented at the operating level and at different time scales. The authors continue that the economic theory examines

each effect at a time. Moreover, using price 'as a means for balancing supply and demand and controlling capacity is economic theory'.

Ziya, Ayhan, and Foley (2004) examine the relationships between the three most used pricing and revenue management assumptions (a) decreasing marginal revenue with respect to demand, (b) decreasing marginal revenue with respect to price, and (c) increasing price elasticity of demand. The authors' work have economic implications as their research has showed that none of the three assumptions a, b, and c can be more restrictive than any other, however can be ordered from the strongest to the weakest when restricted over certain regions. The authors explain, that 'over the region where demand is inelastic, decreasing marginal revenue with respect to demand implies increasing price elasticity and decreasing marginal revenue with respect to price'.

According to Weber (2012:281), price theory is considered by interpretation of economic activities in terms of creation and transfer value, which proceeds to price competition between hotel or travel agency companies. Hotel and travel companies will compete with each other, so prices will depend on the balance between demand and supply. Therefore, revenue management practices affect the conditions which a company achieves an economically efficient way to maximize their revenue.

Curry (2001) work examines a market-level pricing model taking into consideration the actions of competitors. The author developed a pricing model, which provides insights if a company should or should not match the new fare of a competitor. The model can be used to forecast revenue and market share. He incorporated the market-level pricing model into the airline industry however, the model is similar applicable within the hotel industry. According to Curry

(2001), the examined model shows that matching competitors' prices reserves market share.

The paper by Martínez-de-Albéniz and Talluri (2011) refers to a dynamic model of price competition between companies offering identical products such as hotel rooms. Each competitor has a fixed inventory for sale over a fixed number of periods. Therefore, the pricing model considers the competition between two companies when the revenue manager sets prices daily hence, calculates a competitive reservation value for the hotel room according to the period of year. The company with the lower reservation value makes the sale at a price equal to the other company's reservation value. The authors prove that hotels with fewer rooms manage to sell the rooms more frequently at a discounted price, whereas hotels with a substantial amount of rooms are less expected to sell all the rooms however, charge a full price.

Nowadays, both hotels and travel companies have mainly incorporated the day-to-day operations dynamic pricing approach instead of capacity allocation pricing. Bodea and Ferguson (2014:169) refer that IHG and Carlson Group have the capability using optimization systems to generate real-time prices based on capacity allocation, demand, competition, and consumer response.

2.5   Distribution Channels - Online Intermediaries

Historically, hotels obtained reservations directly or indirectly. The role of online distribution channels became important in the last 30 years when the global electronic reservation channels (known as Global Distribution Systems or GDS) were established in the travel industry (Yeoman & McMahon-Beattie, 2011, Vinod, 2011). This new technology allowed mainly airlines at the beginning, and later hotels to control the capacity moreover, to be used as the repository for the obtained reservations. There are currently three major GDS systems (a) Amadeus, (b) Sabre, and (c) Travelport (Galileo, Worldspan), (Phillips, 2005:126), which today each owns one or more OTA's. The central reservation systems (CRS) and global distribution systems (GDS) have changed how distribution is accomplished in the hospitality and travel industry (Morrison, 2010:425) being the first e-commerce channels supplying the companies in a B2B (business to business) environment. E-commerce is divided into three segments (a) business to business (B2B), (b) business to consumer (B2C), and (c) consumer to consumer (C2C) (Tranter, Stuart-Hill, & Parker, 2009). These distribution tools play a major role in the way that revenue management is implemented in a company (Phillips, 2005:121), furthermore, are effective only when combined and integrated with the company's processes of booking optimization (Yeoman & McMahon-Beattie, 2011). Nagle (2002:278) adds that the distribution channels play a key role in managing the company's pricing strategy as a tool employed to ensure the target market demand is obtained. Phillips (2005:143) identifies that the Internet has created new distribution opportunities and led to the 'rise of new online intermediaries' such as the OTAs. Furthermore, has created a new space, which offers consumers 'unprecedented fare visibility' (Phillips, 2005:143) through real-time pricing and

capacity availability. Phillips (2005) continues that the growth of the OTAs created additional challenges as traditional revenue management does not consider market conditions therefore, (Vinod, 2011:87) refers that a need for change of revenue management practices to manage pricing and availability through the expanded variety of the distribution channels is required.

Vinod (2011:86) indicates that distribution channels are the 'storefront' of revenue management. Distribution channels or product distribution channels work as a display for the revenue management recommendations therefore, are inseparably linked. The growth of the Internet has changed the core concept of revenue management as it was traditionally defined, which was focused on capacity control. Today, consumers are informed how competitive the hospitality and tourism environment is, furthermore, how to search a service responding to their needs moreover, their willingness to pay. Therefore, revenue management initiatives and the applicability of pricing should focus not what the supplier is willing to accept, but what the consumer is willing to pay. On the other hand, since distribution channels are used as selling points, companies need a multi-channel strategy to reach the entire consumer segments. According to Sigala and Buhalis (2002), companies that implement electronic distribution successfully add value, create consumer loyalty and develop brand awareness in contrast to those who fail to manipulate the distribution channels.

The work of Choi and Kimes (2002) discusses the opportunities and challenges to the application of hotel revenue management linked with the development of Internet distribution channels. Moreover, the use of Internet distribution channels is associated to a direct cost, which tends to be lower than the traditional distribution channels, therefore, the hotel managers are concerned

more with how to maximise hotel rooms' contribution margins (room selling price less distribution cost). As Helsel (2005) notes, the costs vary by distribution channel and target market segment moreover, represents a pricing opportunity. Phillips (2005:137) writes that 'it is important to estimate incremental costs accurately and to incorporate them into revenue management decisions'. The impact of contribution margin per hotel room is reflected in the proportion of overall profitability therefore, the hotel managers should value the variety of distribution channels while benefitting from the use of revenue management optimization.

Shoemaker (2007) adds that the growth of the Internet has contributed to the popularity of the OTA's. Furthermore, the consumer's ability to book real-time online through the changing online marketplace and mainly the OTA's channel have captured an increasing share of the total consumer spends. Continuously, Morrison, (2010:446-47) indicates that several websites promoted the emergence of the new concept of dynamic packaging, which enables consumers to create their own itineraries hence, to build their own package of different hospitality and tourism components according to their needs, i.e., accommodation, flights, transfers, excursions, car rental, and more.

Online travel sales channels such as Expedia (Hotels.com), Orbitz (ebookers.com), Priceline (booking.com), Travelocity (lastminute.com), are expected to exceed those of traditional sales (Vinod, 2011). According to Vinod (2011) the OTAs that have witnessed the highest growth rates are those selling simpler products, such as hotel sites only, but this will change as market demand grows to address all components of travel with its associated complexity (dynamic packaging).

Hotels work with a variety of distribution channels, traditional or electronic, and accept reservations through these channels. These include direct to consumer approach or work as an intermediary between the consumer and the company throughout the reservation procedure. The distribution channels include (a) online intermediaries (OTA), (b) travel agencies, (c) hotel chains, (d) wholesalers (offline travel agencies), and (d) tour operators. Therefore, due to the changing online environment, increasing competition and demanding customers, it is significantly important to test and identify which distribution channel meets the company's target market challenges.

Carroll and Siguaw (2003) note that distribution channels have changed the way consumers reserve hotel rooms. Traditionally, bookings came through travel agencies and call centres but now received online through online intermediaries and Internet channels.

According to a recent report published by TravelClick (TravelClick, 2014) online distribution channels continue to experience growth and account for nearly half of the hotel bookings. The share of transient room nights by channel based on actual reservations is presented in Table 2-3:

Table 2-3 Share of Transient Rooms Sold by Channel

Channel	Q4 2013
Brand	28.1%
CRO	14.6%
Direct to Hotel	23.8%
GDS	19.1%
OTA	14.3%

Source: www.travelclick.com

However, half of hotel bookings still continue to be received through the traditional distribution channels, which are most profitable due to lower associated distribution costs. More consumers search for hotel rooms on online travel agencies than ever before, regardless of where they conduct their final booking. According to O'Connor and Frew (2004), 'the decision as to which channel to use has become increasingly complex', therefore, hotels need to evaluate and optimize all channels to increase revenue per available room (RevPAR). Moreover, they must improve the relationship between prices, value, and return profit.

Vinod (2011:105) indicates that GDSs and OTAs should enhance a consumer's experience and generate incremental revenues working closely with the hotel industry. The main objective is that each distribution channel can generate revenue for the company therefore, the careful choice and input of the distribution channels are important (Shoemaker, 2007:532; Choi & Kimes, 2002). The company should evaluate the distribution channels by capturing the associated revenue per transaction and the related cost (Choi & Kimes, 2002) otherwise the pricing strategy would be poorly implemented with consequent failure to achieve the objectives (Nagle, 2002:278).

Since the early years, literature has also acknowledged the effectiveness of promotions in drawing new customers to businesses (Walters and Mackenzie, 1988) and the effect that lower price discount increased future purchase to new customers (Anderson and Simester, 2004). The work of Dholakia (2010) recognised a new short time marketing focused channel selling online coupons. These flash sales channels offer short time deals effective only for several hours, through social promotion sites such as: Groupon, Livingsocial,

Travelzoo, OpenTable, Amazon Local Deals, Jetsetter and others, claim to offer a new landscape to the hospitality and travel industry. To be considered for the deal of the day, suppliers had to offer a substantial discount from normal prices and be different from other promotions regularly offered moreover, suppliers needed outstanding reviews (Dev, Falk, & Stroock, 2011; Piccoli and Dev, 2012), and a high commission is paid to deal vendors (Piccoli and Dev, 2012). The pioneer of this exclusive travel promotion model is TravelZoo, which was selling offline and later online coupons to a target market, built on an email list of consumers looking for discounted travel deals. Currently, Groupon is perhaps the best known and certainly the largest of these sites offering substantial discounts for a very limited time (Dholakia, 2010). The researcher thinks that flash sales does not work for the hospitality industry due to the deep promotions and the commission paid out to the deal vendor moreover, to other factors such as hotel price cannibalization, brand value, etc. (example: hotel offers a promotion to a flash sales vendor which is 50% lower than the best available rate (BAR) or even rack rate moreover, a commission on a range of 15% - 40%. Finally, the hotel net yield rate is very low hence, this does not provide any economic sense for the hotel).

This key development requests that the revenue management effort should concentrate on a mixed market segment. The focus is shifting to a balanced approach targeting short term, medium and long term market demand, through incremental cost control to ensure profitability.

2.5.1 Social Media and Revenue Management

The online travel environment continues to expand and social media sites offered a new distribution channel as business generators moreover, as revenue

generators. According to Anderson (2012), the most interesting feature is their influence on consumers' buying patterns, which drives hotel performance. The Deloitte Travel Consumer 2015 report revealed that 59% of UK holidaymakers have been influenced by social media and review sites on their booking decision to purchase travel products (Deloitte, 2015). Online, mobile and brand reputation is increasingly important for UK travellers, according to the latest e-Customer Service Index results from e-Digital Research and IMRG (McClelland, 08/02/2012). Moreover, the same study shows that around three quarters of consumers (72%) prefer to research for holidays online, whilst 53% of consumers said that they avoided in-store travel agents altogether when researching and booking their holidays.

Kaplan and Haenlein (2010) define social media as a 'group of Internet-based applications that allow the creation and exchange of User Generated Content'. The booking window is becoming shorter, therefore, using customer-generated data provides insights to understand consumers needs and wants moreover, to develop targeted pricing strategies.

Noone *et al*, (2010) identify three major areas that the social media related customer content has the potential to impact, which are pricing, customer relationship development and distribution channel management. In revenue management optimization process, the emphasis is on developing prices, generating accurate forecasts and understanding the consumer behaviour, based on the willingness to pay. Therefore, effective revenue management elaborates elasticity of demand approach responding to market demand and differentiating room prices based on demand changes in an attempt to maximize revenue through consumers' willingness to pay.

Lanz (2010) adds that social media provides hotels and travel companies the opportunity to gain inside consumer behaviour knowledge in a real-time environment using two-way interaction. Furthermore, developed brand awareness associated to enhance the consumer experience. Therefore, according to Noone *et al*, (2010) consumer data can be used, to some extent, in the managerial decision process to inform pricing and promotion decisions. Consumer reviews on websites, instant feedback on complaints and responses, such as reviews on websites like TripAdvisor.com, provided insights into what consumers like and what they are willing to pay. To this end, it complements the approach that revenue management is following a consumer oriented value proposition. The online travel environment is rapidly expanding with most of the industry players trying to build a consumer base therefore, are thinking to develop their social media platforms and mobile strategy, offering fast hotel booking applications and special deals through the major social media platforms (Facebook, Twitter, etc.). Travel companies and hotels want to be sure that they make the cut or third parties will control a vital shopping portal (Green & Lomanno, 2011).

It is an opportunity for companies to implement social media and comes at a perfect time for Revenue Management. Due to the constant changing environment, companies have changed their promotional efforts of long-term strategies for short-term tactical strategies. Social media can help companies to establish a presence across various distribution platforms, to generate dynamic pricing features and promotions, as well as to learn more about customers, identify new market segments and their position against competitors.

From the discussion above, it is evident that the growth of distribution channels requested a need for change to the established revenue management

practices. Revenue management systems will need to manage efficiently the diverse target market segments moreover, tailor products to each of these segments through a variety of distribution channels.

Table 2-4 illustrates the discussed applicable travel distribution chain today.

Table 2-4 Travel Distribution Chain - Demand to Supply

Revenue Management Systems	Supply	Connectivity	Retail	Consumers
Demand Forecast Competitor Price Price Sensitivity	Airlines Hotels Car Rental Rail Cruise Tours Events Attractions Insurance	GDS Tour Operators	Online Travel Agencies (OTA's) Traditional Travel Agencies Travel Management Companies (TMCs) Meta-search (Kayak, Sidestep, TripAdvisor) Social Promotion Sites – Flash Sales (Groupon, Travelzoo, LivingSocial) Social Media Sites / Mobile applications - Facebook, Twitter, HotelTonight, Airbnb	Leisure Traveller Business Traveller

Source: Author, expanded model - based on the European Technology and Travel Services Association (ETTSA 2010)

2.6   Marketing

Kotler, (2009:6) defines marketing as a process of '*meeting needs profitably'*. This generic definition is mainly consumer focused, however also includes the company and its objectives. The company should understand this process and evaluate if the existing strategy meets the needs and expectations of the target market. The success of that process requires coordination of other value propositions, creating the roadmap towards the fulfilment of the company's objectives. Revenue management is an optimization approach, which aims to maximise a company's profit. Successful implementation of revenue management considers some primary levers, such as marketing, pricing, inventory control and distribution channels. Consequently, the interaction between marketing and revenue management resulting to an integrated process with shared objectives. In order for the company to fulfil the marketing activities required, the marketing manager has a mixture of marketing decisions to make. The marketing elements or marketing mix tools are as follows: product, price, place, promotion (distribution channels), process, physical evidence, and people (Kotler, 2009:17). To get the most out of the marketing mix, a company must intensify and concentrate its marketing strategy to the elements based on the efficiency and program success. Therefore, within this research, the researcher concentrates on those elements of the entire marketing mix that make an impact on the successful application of revenue management. Marketing elements that have a significant impact on a revenue management context are: pricing, promotion (distribution channels), market segmentation, and consumer behaviour.

A company must introduce a price as part of their sales strategy and their perception to position the product or the company in the market. The work

conducted by Noone and Mount (2008), provided results indicating that the price paid has an effect on marketing strategy due to the given service experience to the consumer. The pricing strategy is a component of the marketing function. Pricing is the moment of truth - all marketing focuses on the pricing decision (Corey, 1983). Moreover, pricing is the only part of the marketing mix that creates revenue (Shoemaker, 2007:372), thus the pricing strategy is of great importance to a firm. Appropriate pricing strategy depends on costs, price sensitivity, and competition (Nagle and Holden, 2002:227). Therefore, a company's marketing strategy on setting prices is a decision making process in which the company should pursue clear marketing objectives. Then, based on these pricing decisions and the established marketing objectives the company set its prices to maximize current profit, revenue, to survive, to achieve sales growth, or market skimming, setting a high price (Kotler, 2000:217). The company's marketing strategy when setting a price should consider the different levels of market demand and costs. Therefore, the pricing decision involves the company to consider the costs, competition, and of course, the consumer, in addition to the distribution channel (Kotler, 2012:300-301). Moreover, Nagle and Holden (2002:15) add that profitable pricing involves an integration of costs and customer value. Furthermore, costs do play a significant role when marketers set the pricing strategy however, need to understand that costs should never determine the price. Additionally, consumers rarely buy on price alone, thus the marketing strategy involves an understanding of consumer's expectations on how they perceive the best value in terms of benefits received within the price-value relationship (Shoemaker, 2007:406). According to Nagle and Holden (2002:274), pricing decisions incorporate more than setting a price, in addition

involves product line, promotion, and distribution decisions as an understanding of a consumers' willingness to pay.

In this research, the researcher discusses the use of dynamic pricing within the hospitality industry. Dynamic pricing is an approach where the company sets different prices for the same product across different individual consumers. The target is to capture more revenue by offering different prices to a variety of consumers. Therefore, understanding the consumer's expectations of a product, and then tailoring pricing segmentation to individual consumers according to consumers' price sensitivity and their willingness to pay (Vinod, 2004). Hence, the company's marketing strategy must consider market segmentation at different levels. Kotler (2012:214) defines a market segment as a group of customers 'who share a similar set of needs and wants' on one or more extents. Zhang, (2011:137) defines market segmentation as "the process of subdividing a market into distinct subsets of customers that behave in the same way or have similar needs". Further, it is an essential element in revenue management practices. Marketers should identify the diversity of consumer needs, and decide which market segment to place emphasis on. Therefore, different market segments have different willingness to pay according to the received value of services. Additionally, the price difference between the market segments might create a trend that some customers try to switch segments (Zhang, 2011:136). According to Nagle and Holden (2002:229) the three approaches to price segmentation are: by buyer identification, by purchase location, and by time of purchase. The latter is referred, as peak-load pricing and occurs when demand for a product or service varies at different times but the product is perishable, as with hotel rooms and airlines seats. Marketers should screen target groups useful for their focus that meets the market

segment's desirable criteria: measurable, substantial, accessible, differentiable, actionable, and compatible (Kotler 2012:231-232, Morrison, 2010:211). Measurable identifies the various characteristics of the target segments and to which extent it can be measured. Substantiality measures whether the market segments are large and profitable enough to serve. Accessibility measures the degree to which the marketer is able to effectively reach a targeted segment otherwise uninterested consumers will receive promotional offers. Differentiable measures whether the company distinguishes the product and provides a unique service to different consumers. Therefore, the product should match uniquely the needs of the separate segments. Actionability is used to evaluate the effectiveness of market segmentation. Thus measures the extent to which the targeted market segment reacts similarly to the market program used to attract them (Reid, 2010:130). Finally, compatibility measures the degree to which a targeted market segment does not conflict with the markets the company already serves (Morrison, 2010:212). In line with the above-mentioned, a hospitality company should define and reposition the product several times to multiple segments to satisfy the needs and wants of different groups of consumers. In this study, the researcher evaluated market segmentation, and how different target markets sought confident to use a range of reservation models. Moreover, the researcher discussed methods for analysing the price – demand – confidence relationship.

2.7 Hypothesised model

This study examines the revenue management and dynamic pricing in the context of its successful adoption within the hospitality and tourism industry. Based on the above discussion the current study used a quantitative research methodology and employed an online survey to acquire the expected responses. A pilot study was used to test the measurement scales, before the full survey was deployed. The full survey was used to test the hypotheses and examine the research objectives. The researcher developed a model for each separate study. In order to achieve an understanding of the research objectives and to examine the hypothesized relationships, the path model in Figure 4-1 was constructed.

Therefore, based on the above literature, the following research objectives and hypotheses in Table 2-5 and 2-6 were proposed.

Table 2-5 Summary relationship of research objectives, questions, and studies hypotheses in study one

Research Objectives	Research Questions	Hypothesised Relationships
1. To examine consumer's behavioural intentions on their willingness to pay (WTP) when using the NYOP method to book a hotel room.	What is the overall experience using a customized pricing? (reverse auction) What demographic characteristics influence consumers' purchase behaviour through the NYOP model.	**H6:** Consumer motivation have a positive influence on purchase intention to use the NYOP model. **H7a,b,c:** There is a significant positive relationship between frequency toward the use of the NYOP model and consumer motivation. **H8a,b,c:** There is a significant positive relationship between frequency toward the use of the NYOP model and consumer purchase intention.
2. To examine the extent of different perceptions, using the NYOP model, its influence on consumers' overall satisfaction and confidence when they purchase travel products. Examine how price factors, reference prices, and the number of bids reflect on utilizing the NYOP model.	What is the overall satisfaction gained from using the NYOP model? Is it profitable to restrict consumers to a single bid?	**H1:** Satisfaction have a significant positive influence on a consumer motivation to use the NYOP. **H2:** Confidence have a significant positive influence on a consumer motivation to use the NYOP. **H3:** Experience have a significant influence on a consumer motivation on using the NYOP. **H4:** Price bargain have a significant influence on a consumer motivation on using the NYOP.
3. To examine whether or not the availability of posted reference prices impacts on consumer's booking pattern when using the NYOP model.	What benefits and drawbacks do the companies see using the NYOP model? What is the optimal price cutoff in a given scenario?	**H5a:** When bids are rejected negative emotions have a significant influence on a consumer motivation to use the NYOP model. **H5b:** Negative emotions have a significant influence on purchase intention to use the NYOP model.

Source: Author

Table 2-6 Summary relationship of research objectives, questions, and studies hypotheses in study three

Research Objectives	Research Questions	Hypothesised Relationships
7. To examine the relationships, how social media used as a distribution channel to encourage consumers to utilize direct bookings through pricing techniques. How this impact revenue strategies and profitability.	How do consumer plan and consume holidays use social media? What is the relationship between social media and dynamic pricing? Is any relationship between SM and alternative pricing methods?	**H1:** There is a positive relationship between social media towards distribution channels use. **H2:** There is a positive relationship between distribution channels and dynamic pricing strategies when a revenue manager uses social media to promote dynamic pricing offers. **H3:** There is a positive relationship between distribution channels and different pricing approaches when a revenue manager uses social media to promote sales based on different other pricing approaches. **H4a:** There is a direct relationship between social media and dynamic pricing. **H4b:** There is a direct relationship between social media and pricing techniques.

Source: Author

2.8   Summary

From the literature, it is obvious that the revenue management contribution to the business practice is an essential component as part of the hospitality and tourism management strategy. Throughout this chapter attention has been given to the most significant research contributions related to implementation and practice of revenue management strategy. However, most of the literature concentrates on a marketing or operations perspective, while a number of limited attempts to implement the practical approach, which recognises the effect profitability has on the 'bottom line' of their revenue management decisions.

Revenue management also known as yield management originated in the airline industry as a method for managing capacity profitably and has been adopted and successfully implemented in car rental, hotel and restaurant industries (Smith, Leimkuhler, and Darrow, 1992; Kimes, 1992; Cross, 1997).

Revenue management is mainly concerned with a company's demand-management decisions. Therefore, revenue management can be categorized into (a) structural decision or operational decisions, (b) price decisions and (c) quantity decisions where the importance of these decision depends on business structure (Talluri, Karaesmen, van Ryzin, and Vulcano, 2009).

According to Kimes (1998; 2004; 2009) the implementation of revenue management practice has been applicable to any business that has fixed capacity such as a hotel or restaurant, perishable inventory, demand that is variable and uncertain, high fixed cost structure, and varying customer price sensitivity. Therefore, the main objective is to maximize revenue given capacity and demand constraints within a period (Kimes, 2009). Following that, Boyd and

Bilegan (2003) explain that traditionally the ability to effectively implement revenue management strategies, a company should consider four main elements (a) the inventory control mechanism, (b) optimization, (c) demand model and forecasting, and (d) interaction with users of the revenue management system. This strategic framework of effective control of demand will ensure in maximizing the company's revenue.

According to Boyd and Bilegan (2003), the Internet has changed the travel distribution channel as the future is focused on the consumer and their willingness to pay. This customer-centric thinking focuses on capturing the impact on the fundamentals of revenue management moreover, the fundamental issues of pricing and consumer value.

In recent years, the distribution marketplace has been progressively developed and has grown. However, this innovation has increased the pressure on the hospitality and tourism industry in terms of competition. Today, the consumer has an incredible choice available when searching for a hotel, meaning that they have the option to consider any personalized offer that is close to his willingness to pay.

The literature is rich with respect to pricing techniques, strategy, and models to be used as part of the revenue management strategy. Pricing is a strategic function, which creates a valuable proposition to the consumer (Baker, 2006:12). Pricing is one of the most difficult tasks for hospitality managers, since the hotel occupancy will change with pricing, thus influencing profitability. Therefore, if the selling price of the hotel room is set too low, the operation is losing out on potential revenue, if the price is too high, the operation will lose occupancy. Price sensitivity is measured by elasticity of demand where a change in demand is associated with a particular change in price. Within this

context, the room rates would not only reflect the costs, investments and the rates of return, but also the market's elasticity of demand, competition, and quality of management. Therefore, the room rate must be attractive and competitive to attract consumers' willingness to pay, must cover the operational costs, hence to maximise the profit, and finally the room rate must generate cash flow to meet the hotel's financial requirements and expectations (Burgess and Bryant, 2001). A closer examination that supports the contribution to the hotel pricing strategy efficiency reveals the practical approach that the selling room price will vary according to the product and service, the market segmentation, the time sensitivity (season), the room's location, competition pressures, and economic fluctuations in the market.

Over the years, the hospitality and travel industry has identified a successful progression over the adoption and implementation of the dynamic pricing discipline and further development of integration in revenue management optimization. In the past, structured pricing strategies used by companies involved static, fixed prices for a product during a period of time, for example in hospitality for an entire season. However, this approach has been changed after the implementation of revenue management systems and the categorization of consumers to different segments.

Pricing techniques can be classified into two main categories: posted-price mechanism and price discovery mechanisms (Elmaghraby and Keskinocak, 2003). Under the latter method, prices are illustrated via a dynamic technique. However, both categories could implement dynamic price approaches, to adjust the prices according to elasticity of demand. The reason for using dynamic pricing is the advantage that this particular pricing strategy offers to the companies. It allows changing the prices according to the demand, thereby

increasing the profitability moreover, increasing the overall efficiency of the company. The dynamic pricing approach increases the difference between the selling price (sp) and costs (Revenue (R) = sp – variable cost (vc) – fixed cost (fc)). According to Elmaghraby and Keskinocak (2003), the three factors contributing to the adoption of dynamic pricing is (a) an increased availability of demand data, (b) ease of changing prices due to new technologies and (c) an availability of decision-support tools for analysing demand data and for dynamic pricing. Therefore, the focus relies on consumer behaviour, how a company understands the consumer hence, to be able to set and adjust prices at a minimal cost or quantities on a tactical level.

The benefits of the dynamic pricing approach are two-fold. As pricing becomes an important component of revenue management strategy and consumers are taking control over the prices, both consumers and companies can benefit through increased pricing transparency and direct price comparison.

Furthermore, from the perspectives of competitive advantage as Chris Elam of Global Hyatt said: "it's more than controlling the rooms. It's understanding things like the elasticity of demand for different customer segments and the appropriate channel mix and, most importantly, understanding in a timely manner the needed response" (Cross, Higbie, and Cross, 2011:61).

The literature review chapter presented the main literature that was crucial for the complete understanding of the topic. This literature outline provided a solid foundation for this study and comprised the theoretical background that it was based on. The next chapter focuses on consumer behaviour within an online distribution environment. Chapter four then describes the methodology and procedures employed in this research in order to address the objectives and answer the research questions.

3   CONSUMER BEHAVIOUR IN ONLINE TRAVEL

3.1   Introduction

One established perception is that consumers purchase 'emotionally' and justify 'intellectually' (Baker, 2006:139). The development of the Internet has changed the way that consumers behave when planning, booking and during their holiday as well as after their holidays providing feedback on positive and negative experiences. Technology has therefore affected the consumer booking experience, providing a real-time advantage of experiencing travel additionally, used for holiday planning as users generate content online. According to a study prepared for Google by Ipsos MediaCT, consumers begin by searching online in the travel process before deciding where or how they want to travel, on leisure purposes up to 66% and business up to 69% (Ipsos MediaCT/Google Travel, 2014). Moreover, market research in 2012 estimated 32% of hotel revenue is generated through online bookings (TravelClick.com - Hach, 2012) and other research by PhoCusWright, considers that in 2014 online booking justifies for 43% of total travel sales in America and 45% in Europe (Economist, 2014). Despite the effects of the economic downturn, booking volume is expected to grow and consumers booking through online channels will be paying around +3% higher rates than prior years (hotelmarketing.com, 2013). The changes in consumer travel shopping behaviour have created a new environment online, and the suppliers should utilize specific strategies to manage the channels and maximize revenue. The online environment is like a marketplace and has changed the way companies conduct business. Additionally, the Internet has been established as a method to make booking features available hence, the role of travel agents has transformed. Therefore,

the Internet has increased the competition within the travel environment and consumer's expectations (Murphy and Tan, 2003). As online travel arrangements increased, online travel intermediaries must integrate them with new expectations hence, must change to meet the consumer's expanding requirements and expectations. The online travel intermediaries exist in the form of online third-party travel agencies (e.g., Expedia, Hotels.com, and Priceline), content-generated sites or social media review sites (e.g., TripAdvisor.com), meta-search or fare aggregators' sites (e.g., Kayak.com, Trivago.com), flash sales sites (e.g., Groupon, Jetsetter.com, LivingSocial.com, AmazonLocal.com), search engines (e.g., Google, Bing), and finally the newer players in the online mobile device landscape in the form of mobile applications (e.g., Airbnb, UberTaxi, HotelTonight, Room77), (SabreTravelNetwork.com, 2011; Phocuswright - Walsh, 2015). To stay ahead, online travel intermediaries must follow the consumers, as the mobile landscape evolves and expands, most searches are done via a mobile device. Consumers have switched from computers to tablets and smartphones. According to research conducted in 2014 from Expedia, 67% of all UK travel site visitors reach them via mobile devices and in the US 90% of monthly travel visitors use a mobile device to engage with digital travel content (Expedia, 2015). These technologies allow consumers to share experiences in real-time hence, consumer shopping behaviour has dramatically changed the travel experience. Therefore, understanding online consumer behaviour, meeting consumers' expectations and the factors that influence their booking decisions is a key attribute, which will provide valuable knowledge to the company to determine the market segments.

Orbitz.com used a policy based on consumer segmentation analysis, where they differentiated the behaviour of a PC user from a Mac user hence, converting this information into a price discrimination selling strategy. According to Orbitz's CEO, the company is collecting and analysing unstructured data that include details on every aspect of a consumers' trip - planning behaviour on the site. Therefore, Orbitz realised that Mac users spend more money when purchasing travel products compared to PC users. So, in near future the company is planning to offer a recommended hotels path with different hotel inventory to Mac users (Tnooz.com, 2013).

This chapter is reviewing the consumer behaviour when purchasing online travel products. Section 3.2, provides significant widely used consumer behaviour definitions, what it means, looks at whether all consumers behave similarly and, which activities are included to make an online purchase. Section 3.3, describes the factors influencing consumer behaviour, when they search online during the travel process. As the Internet has revolutionised the travel industry, this has also changed the way companies conduct business. Moreover, other related disciplines, such as economics, psychology, and marketing influencing consumer behaviour. Whilst, Section 3.4, illustrates how RM optimization identifies and analyses consumer behaviour decisions. One of the most important elements in the purchase travel process in an online environment and consumer response is the consumer's memory of past prices in the context of dynamic pricing. RM decisions are based on analyses of consumer data and it is important to understand how the consumer response to pricing strategies affects the supplier's revenue. Do consumer's monitor and control online prices overtime? Section 3.5 provides conceptual definitions of terms. At the end, Section 3.6 is a chapter summary presenting conclusions.

3.2 Defining Consumer Behaviour

The Internet has been perceived to be an effective primary driver for consumers to seek information and purchase travel-related products (Werthner and Klein, 1999). According to Pan and Fesenmaier (2000), the Internet is a more effective choice for holiday preparation prior to the trip because of the enormous quantity of information available. Moreover, tourism has been recognised as a leading field of application and as a most effectual means of Business-to-Consumer (B2C) channel (Werthner and Klein, 2000). Therefore, it is significant for the industry to understand the needs, wants, desires, and expectations of individuals and groups. According to Koufaris (2002), online consumers are different. Koufaris (2002:206) highlights that a key difference between an online and offline consumer behaviour is that online consumers are more "powerful, demanding, and utilitarian in her shopping expeditions". Blythe (2013:207) refers to the above that because online consumers are able to choose in a real-world environment, companies need to work harder in order to lure suitable consumers. Today, consumers are cautious over the various degrees of information received through the Internet and the shopping experience. Therefore, personal interactions remain a key element although the consumer behaviour as regards, as a dynamic online purchasing environment. According to Blythe (2013:207) the online environment is broken down into three types: (a) interactive, a source of information online for products, reviews, (b) social media, as a forum for people to interact in real-time, and (c) virtual reality sites, which allow people to live in a virtual environment. This online environment is like a marketplace, an interacting and dynamic marketplace by nature. There is interplay between the consumers and the environment. Hence, it is where

companies need to establish a trust in order to retain consumers. The answer can be investigated through consumer behaviour research and provide the aspects involved in the interplay.

Therefore, as consumer behaviour encompasses many things, Table 3.1 presents a range of consumer behaviour definitions and shows an approach in many different ways.

Table 3-1 Definitions of Consumer Behaviour

Scholars	Definitions
Engel, Blackwell and Miniard, (1986:4)	*'those acts of individuals directly involved in obtaining, using, and disposing of economic goods and services, including the decision processes that precede and determine these acts'*
Kotler, (1994:162)	*'is the study of how people buy, what they buy, when they buy and why they buy.*
Bennett (1995:59)	*'the dynamic interaction of affect and cognition, behaviour, and environmental events by which human beings conduct the exchange aspects of their lives'*
Blackwell et al. (2001:6-7)	*'is the activities people undertake when obtaining, consuming and disposing of products and services'*
Solomon et al. (2006:6-7)	An on-going process to satisfy needs and desires.
Schiffman and Kanuk (2012:3)	*'the behavior that consumers display in searching for, purchasing, using, evaluating and disposing of products, services and ideas which they expect will satisfy their needs'*

Source: Author

How consumers make decisions to purchase is a process therefore, Solomon et al. (2006:6-7) defines consumer behaviour as an on-going process to satisfy needs and desires. The field of consumer behaviour covers a lot of ground: it is the study of the processes involved when individuals or groups select, purchase, use or dispose of products, services, ideas or experiences to satisfy needs and desires. Blythe (2013:5) mentioned that 'not all of our behaviour can be defined as consumer behaviour'. Therefore, he accepted a definition provided by Blackwell et al. (2001:6-7), which defined consumer behaviour as follows: '*is the activities people undertake when obtaining, consuming and disposing of products and services'*.

It is important for companies to understand consumer behaviour to review the selling strategy and develop the best strategy for the future because the factors that structure behaviour may have changed. This strategy review emphasises that the company's profitability is depended on consumer's retention therefore, engaging and satisfying consumer expectations contribute to encouraging and gaining greater consumer loyalty. Following this point, Blythe (2013:6) adds another definition of consumer behaviour cited by Bennett (1995:59) '*the dynamic interaction of affect and cognition, behaviour, and environmental events by which human beings conduct the exchange aspects of their lives'*.

This definition emphasises the interaction of different factors. Recent studies have shown that B2C consumers are motivated to purchase online for various reasons – social, shopping, entertainment and requires less "human interaction", whilst B2B consumers expecting flexibility with their purchasing options, are driven by cost savings, speed, selling and consumer relationships (Chaffey and Smith, 2013:145).

Schiffman and Kanuk (2012:3) define consumer behaviour similarly as: '*the behavior that consumers display in searching for, purchasing, using, evaluating and disposing of products, services and ideas which they expect will satisfy their needs'*. The way a consumer uses activities while 'obtaining' products and services, involves a decision process (Blythe, 2013:5).

According to Talluri and van Ryzin (2004), during the reservation process each consumer follows a simple decision rule. If the reservation rate v equals or exceeds the offered price ρ, the consumer confirms the reservation otherwise, they will not purchase the product. Therefore, understanding consumer behaviour is necessary for better assessment of online sales promotions, various premiums, and rates, which can be outlined as maximizing consumers acceptance (Bodea and Ferguson, 2014).

Moreover, according to Blythe (2013:13), the study of consumer behaviour is a result of combining other disciplines. The study scrutinizes economics, sociology, psychology, anthropology, and neuroscience for its basic theories and research approaches. Consequently, in economics, alternative theories have been developed to understand consumer decisions under uncertainty (Özer and Zheng, 2012:418). According to Langen (2013:19), behavioural economics and rational choice theory explains consumer decision-making behaviour. Hence, according to Baker (2006:279) behavioural economics describe that consumers give more weight to losses than to gains. Moreover, economics influences consumer behaviour with several concepts such as economic choice, elasticity of demand to the degree to which demand is influenced by a price change, and the indifference curve where one product is

regarded as a suitable to an alternative. Therefore, the fundamental challenge concerns that the behaviour of consumers determines the demand and supply relationship. Understanding consumer behaviour in an online environment is a major task and needs the capabilities of all of the above disciplines.

3.3   Factors Influencing Online Purchasing Consumer Behaviour

Every day, millions of consumers planning their vacations online are following a hierarchical structure during the travel planning process. Fesenmaier and Jeng (2000) note that travel planning involves many sub-decisions and can be viewed as a dynamic and contingent process where central decisions are made at the beginning of the travel planning process. The study of Pan and Fesenmaier (2006:825), indicates that consumer behaviour is a complex process for the subjects and performed 'a variety of search, navigation, and organisation tasks' as part of the vacation planning through the Internet'. These processes are often difficult as consumers are faced with a large amount of information available from different sources. The noticed difficulty of consumer decisions is influenced by the information provided and by the task components in the consumer environment (Bettman, Johnson, and Payne, 1991). This creates uncertainty as to which travel product choice they want to purchase. However, empirical research on online shopping specifies that online choices offer consumers the potential to make better quality decisions (Punj, 2012; Darley, Blankson, and Luethge, 2010). According to Jeng and Fesenmaier (2002), consumers are planning, collecting and reviewing various forms of travel information early in the travel decision-making process in order to minimize the risk of making a poor destination decision. Recent research commissioned by RightNow and conducted by Harris Interactive in 2010, shows that consumers showing tolerance for bad service has been weakening, as 82 percent (%) of consumers will not purchase again from a company after a bad consumer experience (Harris Interactive, 2010). Therefore, companies should maximise

the potential of quality service in order to enhance the individualized consumer experience.

Since the penetration of the Internet, consumer expectations have certainly increased to find the best price whilst shopping online. However, it is uncertain that the growth of e-commerce and the Internet would be expected to result in better consumer decision-making (Punj, 2012). The focus of the decision process is on the interaction of different factors. Therefore, the main attitudes of the consumer behaviour model shaped by thought, emotion, and intended behaviour is influenced by personal and environmental elements and is presented in Figure 3-1:

Figure 3-1 Consumer behaviour dynamics
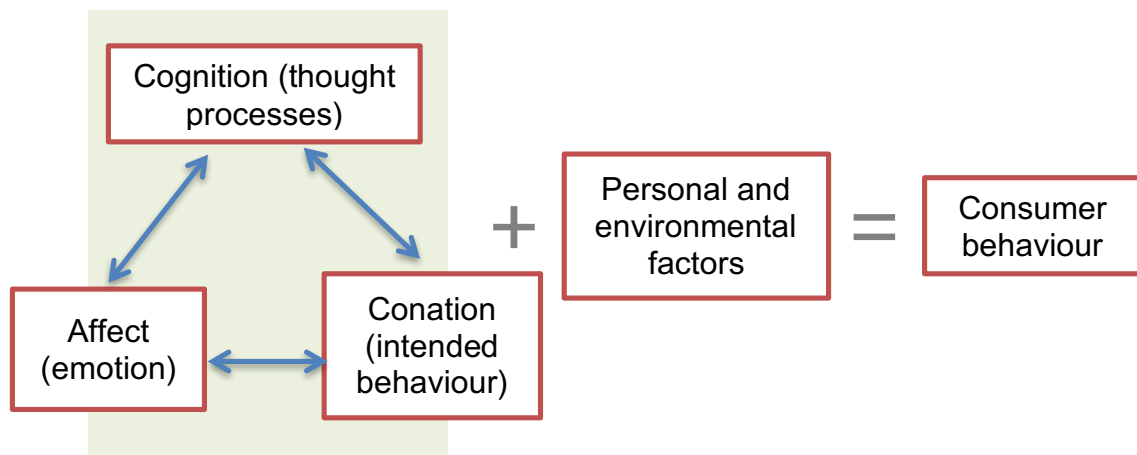
Source: Blythe (2013:7)

The Weber-Fechner Law states that 'buyers perceive price differences in proportional terms, not absolute terms' (Baker, 2006:280). Therefore, the above-mentioned law indicates that each consumer has an upper and lower threshold price in the mind, and if the price is proven accurate, they will proceed with the purchase (Baker, 2006:280). Nowadays, in practice consumers have

the possibility to compare products and offers. Hence, for a consumer to remain loyal to a supplier, the offer must satisfy the service that the consumer has in mind, as there are many alternative offers that exist. 'Extra nice service is really not enough' (Blythe, 2013:11). This is evidence that the Internet provides to consumers with a tool to take control over the purchase process.

A common assumption indicates that consumers are informed about product shopping search, and their alternatives should not be costly, otherwise there may be a violation (Stigler, 1961). Hence, the expectation is that the Internet would reduce the cost and increases consumer participation in markets moreover, can promote consumer brand loyalty and decrease competition (Ratchford, 2009:103). The question, that arises, is what factors influence the online consumers purchase decisions and how sophisticated is the decision-making process?

Many companies consider relationship management sufficiently enough to maintain consumers and remain competitive, specifically in a B2B environment (Hudson, 2013:40). However, consumer needs change rapidly hence, the cornerstone of success is consumer satisfaction. Therefore, to satisfy consumer behaviour, companies should firstly understand and analyse consumer data using observations, and satisfy consumer motives during the purchasing process (Hudson, 2013:41). The key factor that influences consumer behaviour is motivation because it is the driven determinant that satisfies needs. Understanding the forces, which motivate consumer behaviour, must firstly attempt to explain and evaluate consumer needs. This drive creates the desire state (Blythe, 2013:18), hence the company strategy should be focused to encourage and develop the drive towards a specific motive. Urge and

understanding this motive leads to influencing consumer behaviour to the purchase of travel products and services.

Figure 3.2 shows a variety of features – factors that influence the consumer's behaviour.

Figure 3-2 Factors Influencing Consumer Behaviour
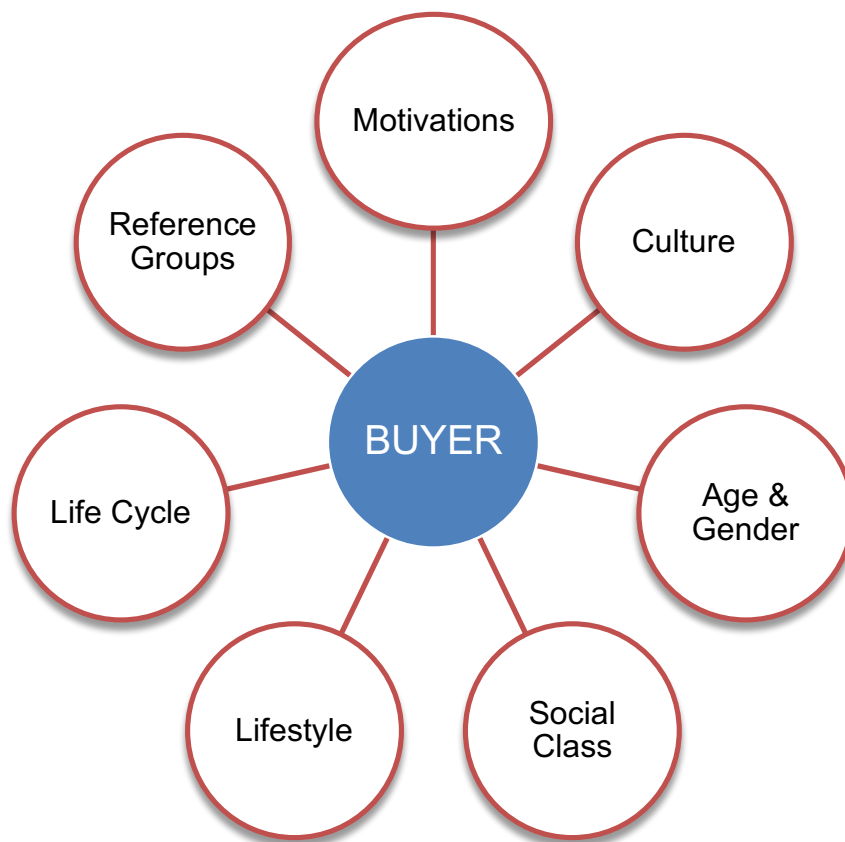
Source: Hudson (2012:41)

The early studies of consumer behaviour have identified a plethora of influencing factors on decision-making. These studies refer to 'grand models' such as the EKB, 1968; Howard and Sheth, 1969; and Nicosia, 1966.

Engel, Kollat, and Blackwell (EKB) have introduced the first consumer decision model (CDP) in 1968, as an extended model to the original John Dewey's

(1910) process model (Darley, Blankson, and Luethge, 2010). The original
model has been upon numerous modifications and revisions. Finally, a revised
consumer decision model was introduced in 1986. The latest publication of the
model is referred to as the Engel-Blackwell-Miniard Model (EBM) (Blackwell,
Miniard, and Engel, 2001:83). The various components of the consumer
decision process and the relationships among them are depicted in Figure 3.3
below.

Figure 3-3 Consumer Decision Model (EBM Model)
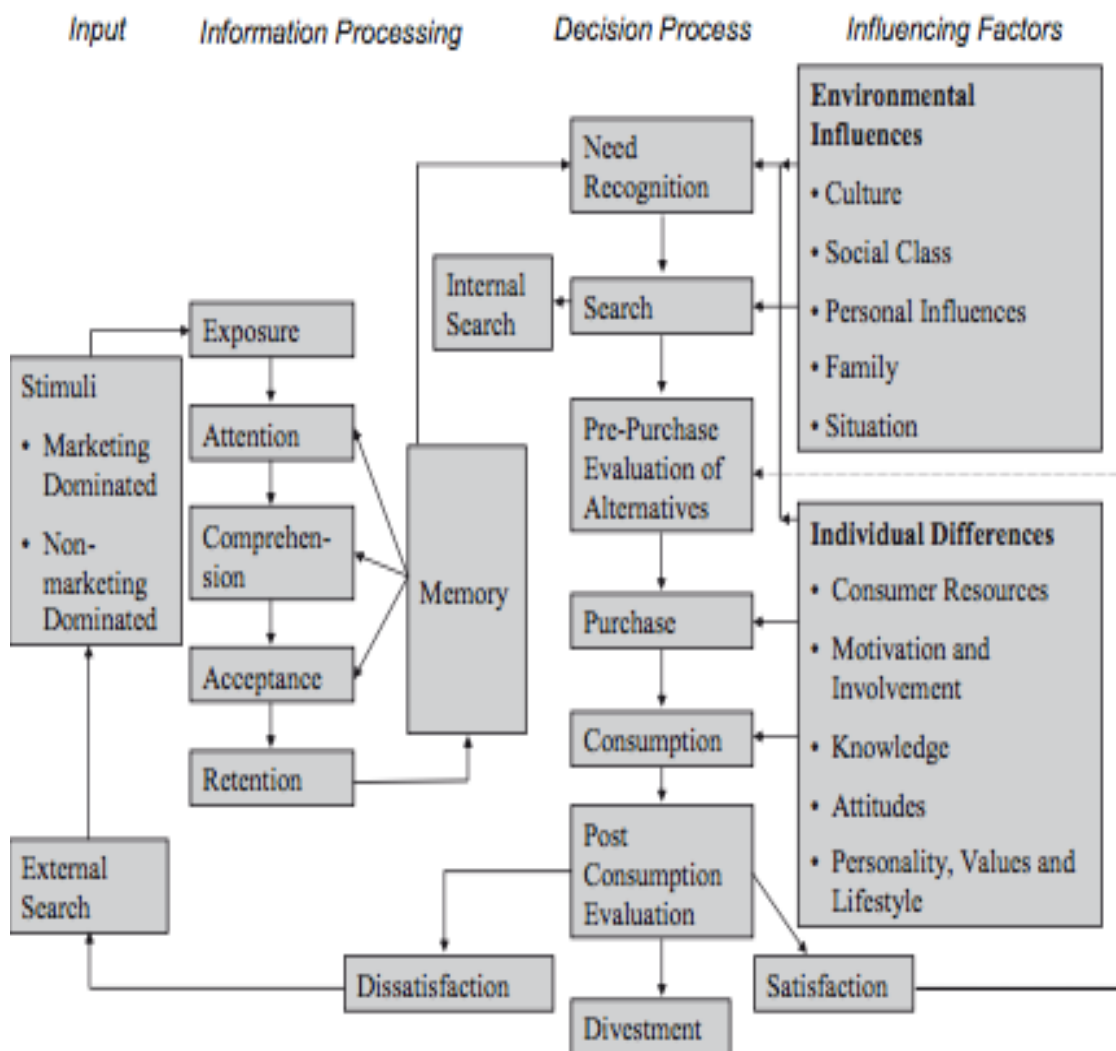
Source: Blackwell, Miniard, and Engel (2001:83)

The original consumer decision model of Engel, Kollat, and Blackwell organized the consumer decision process to five stages before they purchase products or services (a) need recognition, (b) search for information, (c) evaluation of alternatives, (d) choice, and (e) outcomes (Blackwell, Miniard, and Engel, 2006:115). The Engel, Blackwell, and Miniard model guides consumers to three stages but focuses on extensive purchase decision-making. These three stages are considered the variables influencing consumer's decision making therefore, the components elaborate as a cognitive process through the purchase decision (Blackwell, Miniard, and Engel, 2006). The decision-making process starts as consumers recognise their needs or respond to a stimulus, then needs are decided and the consumer begins searching for solutions necessary to arrive at a decision to satisfy the wants. The consumer obtains information from several external sources, the influences of acquiring information vary, however are useful for the consumer to review available alternative products. The continuous development of the Internet, assists consumers with the information searching process. Additional input should be added to the factors influencing the consumer decision. According to Gretzel, Hwang, and Fesenmaier, (2006), online tourist information related to 'situational needs' such as trip length, level of activities, schedule the consumer travel planning process therefore must be considered. Since the Internet growth, online consumer behaviour is changing rapidly, as it easier for consumers to search and purchase a product. Moreover, factors identified from other cross-disciplinary sectors such as economics (e.g., time costs), computing (e.g., third parties (online travel agencies), or search engines), and psychology (e.g., decision strategies) may potentially influence the consumer decision-making processes in online environments (Punj, 2012:792). As the original model has been modified several times, Darley,

Blankson, and Luethge (2010) developed a comprehensive review and model, which outlined the online consumer behaviour and decision-making processes. To their study, the authors have adapted the traditional consumer decision-making process model of consumer behaviour and extended to a modified model of online consumer behaviour. They have examined and recognised external factors such as (a) individual characteristics, (b) socio-cultural factors, (c) situational and economic factors, and (d) online environment, which impact and linkage the decision-making process in an online environment. The modified extended model recognises and provides an understanding that online consumer behaviour is a complex decision-making process (Darley, Blankson, and Luethge, 2010). In addition, the authors mentioned that a number of aspects in the online environment, and alternative evaluations are important dimensions, which need clarification. Therefore, psychological, socio-cultural, and environmental factors need to be explored, in order to understand the complex interactions of the online consumer behaviour decision process.

The study of Verma, Stock, and McCarthy (2012) specifies that when consumers collect information for a hotel stay, they mostly follow recommendations from friends and colleagues or the company in case of a business customer, followed by travel-related websites, search engines, and OTAs for leisure and finally, book the stay through the brand website, OTAs, and TripAdvisor.

Beldona, Morrison, and O'Leary (2005) prepared a framework to evaluate the drivers behind online consumer behaviour. The authors argued that individual consumer characteristics such as convenience, price comparison, and lower prices have been identified as significant reasons. Moreover, found that depending on the consumers, the study identified heterogeneity of travel

products as the key element. Finally, consumers are motivated from transactional qualities (ease of use) and informational aspects (activities, product information) as main motives for purchasing online travel products. The quality and amount of information are related to decision quality so have a significant influence on a consumer's decision to choose (Klein, Köhne, and Öörni, 2004). Figure 3.4 provides a consumer behaviour process model adapted to the online purchase environment.

Figure 3-4 A modified model of online consumer behaviour and decision-making.
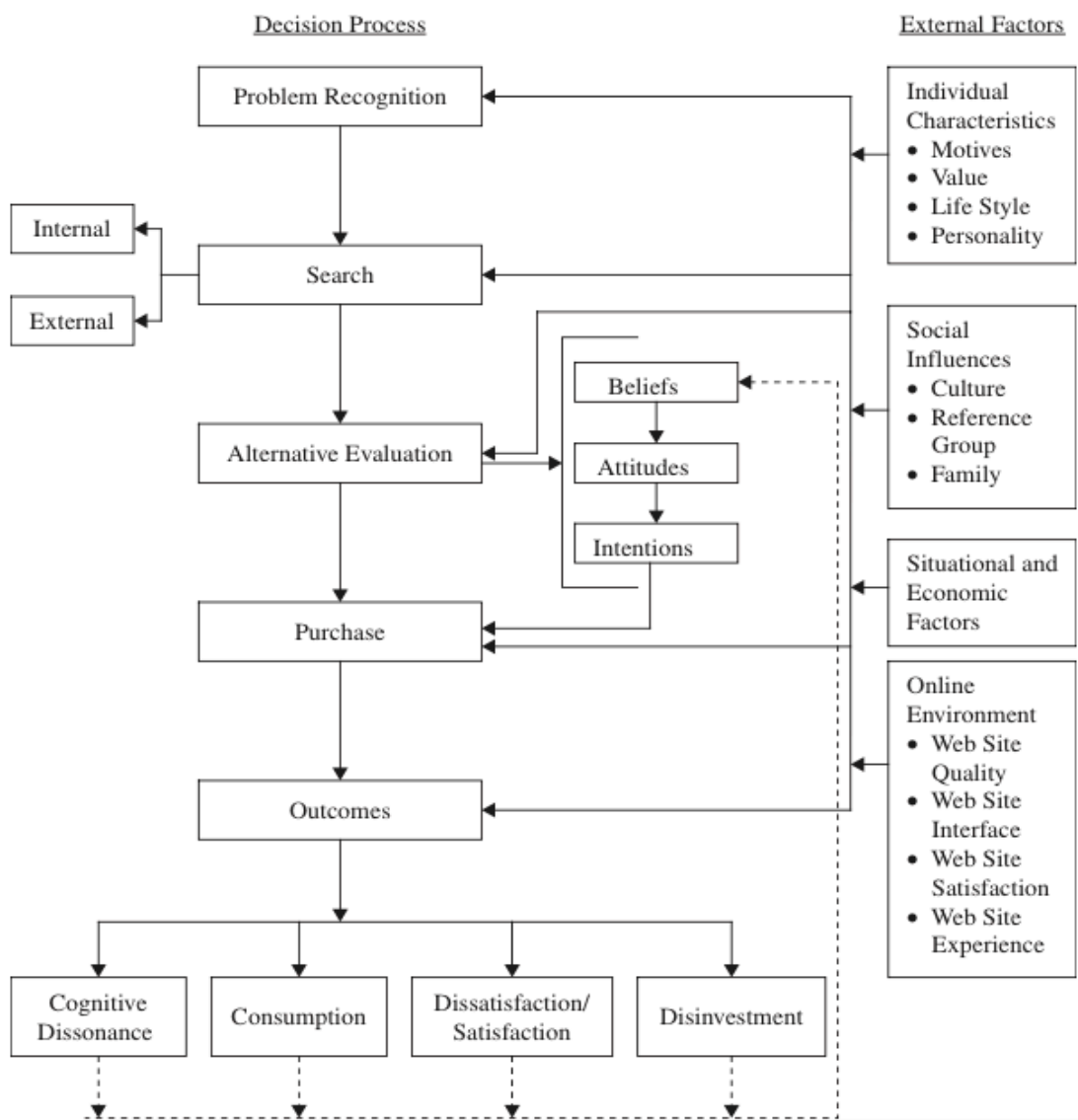
Source: Darley, Blankson, and Luethge (2010)

The model demonstrates the decision process stages, the complexity, underlying the external or online environmental influences that impact online consumer behaviour (Darley *et al.*, 2010).

'Internet choice behavior is dynamic and described as an evolving series of interrelated choices, where both consumer and marketer can play a role in shaping the context of subsequent choice events depending upon the outcome of earlier encounters' (Bucklin et al., 2002:247).

As pointed out by Vogt and Fesenmaier (1998), consumer's online search behaviour has been connected to a number of needs such as functional needs, hedonic needs, innovation needs, aesthetic needs, and sign needs. Mady (2011) contributes to the above that consumers have become familiar with new technology. The Internet has enhanced the consumer's ability to take control of the relationship between the seller and consumer in a way that has formerly been impossible. A relationship that puts consumer behaviour at the centre because consumers are holding the buying power, therefore, they are able to take over some of the roles of sellers in the managing relationship (Blythe, 2013:11).

According to Constantinides (2004), consumer behaviour of traditional and online consumers is not similar. In a traditional environment, the 4Ps of the marketing mix influence the purchase consumer behaviour, whilst in an online environment, consumer characteristics and environmental influences, service/product characteristics, medium and merchant/intermediary characteristics also underpin the online decision-making process.

In this research, one of the objectives is examining the consumer behaviour capture using the NYOP model. How consumers behave using the NYOP model, which is a bidding model. Therefore, although the understanding of

buyer behaviour in an online auction application (NYOP model) remains inadequate, the basic elements of the consumer decision purchase process, such as preference construction and the impact of choice context should be similar to a normal decision-making process (Ariely and Simonson, 2003). However, purchasing a travel product through an online bidding model is still different than through a typical third party provider. These differences could have an influence on consumer decision processes, consumer preferences and satisfaction (Ariely and Simonson, 2003). Therefore, three stages resulting through an online auction (a) the decision whether to enter an auction and the bidding amount, (b) consumer bidding behaviour while waiting and the bidding is in progress, and (c) bidding behaviour at the confirmation. During this purchase process, two major elements influence consumer bidding behaviour (a) value assessment, and (b) decision dynamics as single or repeating bidding decisions are made during the process (Ariely and Simonson, 2003). In addition, the decision whether to enter a bidding process creates a decision under uncertainty, which is the fundamental idea of 'prospect theory' developed by Kahneman and Tversky (Thaler, 1985). According to the prospect theory, 'consumers evaluate an outcome based on the comparison with some subjective reference point, rather than based on the absolute outcome itself' (Özer and Zheng, 2012:418). Considering prospect theory, consumers using a NYOP mechanism, the outcome (booking confirmation after seller acceptance of consumer bidding) relied on the evaluation of the gain or losses compared to the reference point, which in this case is the rate (higher or lower) for the same travel product through a third party provider (OTA).

3.4   Revenue Management in OTA's and Online Consumer Behaviour

The well-known definition of Revenue Management is '*to sell the right product at the right time to the right customer and for the right price*' (Cross, 1997:4). However, how we know what types of consumers the company should target and secondly how the consumers behave about when the right time comes, and what the right (fair) price is. According to Cross (1997:82) a company's key task in implementing revenue management procedures, is to collect 'as much data as possible about consumer behaviour and the market you are in', in order to predict future consumer demand and improve consumer service. Hence, companies must pay attention to a consumer's purchase decision process, where a consumer evaluates alternatives and makes choices when to buy, how much to pay, and which travel product to purchase. Nowadays, consumers are becoming more strategic thinkers because of the enormous available data on the Internet regarding prices, through price comparison sites.

Baker (2006:254) indicates that companies are able to assess the value of each consumer by the company breaking down the consumer-collected information, hence modelling consumer behaviour. This awareness of consumer behaviour patterns could guide to a dynamic price change towards revenue maximization through optimal optimization based on different consumer patterns. Hence, modelling the seller and the buyer behaviour is effectively models of how consumers respond to different pricing approaches. In particular, consumers may choose to purchase or wait for a promotion, capacity availability, before buying a travel product in response to a company's dynamic pricing approach (Shen and Su, 2007). Therefore, companies should consider two types of

consumer behaviour (a) consumers with a willingness to pay and (b) consumers with a willingness to wait.

The traditional consumer travel purchase process is mainly divided into three stages. However, the context of the online travel environment can expand and include several pre and post sub-stages. The travel purchase process first stage is referred as preparation and online search in the pre booking stage, then decide, plan and book the travel product online in the purchase stage, and finally experience and post, sharing feedback using mouth-to-mouth or online travel reviews in the post-booking stage.

Figure 3-5 illustrates the stages during the travel purchase process of a consumer.

Figure 3-5: The Travel Purchase Process
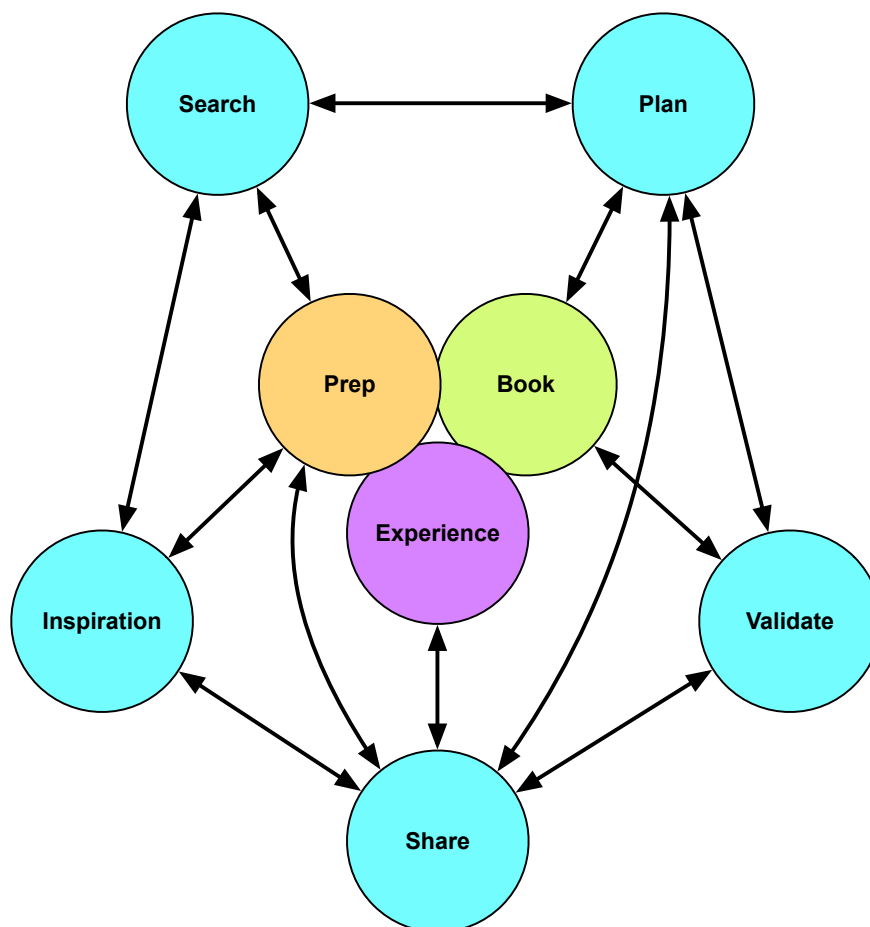
Source: Distribution Channel Analysis: A Guide for Hotels, AH&LA and STR Special Report (2012:46)

Next, there is an inevitable step for companies in understanding the consumer travel purchase process as part of the development of revenue optimization and pricing strategies. Kimes (1994) stated that in practice there is a relationship between revenue management, mathematical analyses of game-theoretic models to model consumer behaviour (Shen and Su, 2007), and consumer's view of fairness and satisfaction moreover. According to Bodea and Ferguson (2014:217) consumers believe that they are eligible to a reasonable price whilst the company can make a reasonable profit. If revenue management practice results to a decline in consumer satisfaction because consumers perceived the revenue management practices as unfair, it will lead ultimately to a business loss from repeat business (Kimes, 1994; El Haddad, Roper, and Jones 2008). In an online environment, consumer satisfaction is namely as e-satisfaction and has been defined 'as the contentment of the consumer with respect to his or her prior purchasing experience with an online provider' (Anderson and Srinivasan, 2003:125). Therefore, consumer satisfaction is crucial because a dissatisfied consumer will search for alternative choices and is more likely to share negative feedback, while a satisfied consumer is likely to become a repeater and develop a closer relationship with the online provider. To this end, a repeater is a loyal consumer, which manifests a repeat buying behaviour. Therefore, within the online environment, e-loyalty has been defined 'as the consumer's favourable attitude toward an online provider resulting in repeat buying behaviour' (Anderson and Srinivasan, 2003:125). Finally, the same study has shown that high consumer e-satisfaction creates consumer e-loyalty, hence repeating purchase intention. Repeat consumers are five times more profitable than acquiring new consumers (Chaffey and Smith, 2013:159). Despite the

importance of consumer satisfaction, a common way of measuring the satisfaction in the tourism and hospitality online environment is still missing. A well-known consumer satisfaction instrument in the traditional service industry is SERVQUAL developed by Parasuraman, Zeithaml, and Berry in 1985 that measures the difference between consumer expectations and perceptions of service quality. The SERVQUAL has been adjusted for the hospitality industry by Knutson et al in 1990 and is known as LODGSERV based on the five dimensions of service quality (Hudson, 2013:124-125).

Wirtz *et al.* (2003:216) states that although revenue management is adapted in various industries the '*consumer seems to have been forgotten in this stream of research*'. Therefore, the intent is that revenue management must be practiced in such a way that maintains a balance between short term and long-term results, that consumers find acceptable, which finally will still benefit the company and increase the profitability.

An implementation of a revenue management optimization system is based on how demand responds to changes in price. Therefore, market segmentation is a fundamental element needed for the effective application of revenue management techniques. Hence, the company considers to incorporate pricing strategies that optimize purchase behaviour and segment consumers into those sensitive to price, assume as myopic consumers and those sensitive to time as strategic consumers (Yeoman, McMahon-Beattie, and Ingold, 2000:9; Talluri and van Ryzin, 2004:182). Under the specific consumer heterogeneity, a myopic consumer purchases a travel product immediately when the offered price *p(t)* is less than his valuation $\mathcal{V}$ (the willingness to pay) (Talluri and van Ryzin, 2004:223), while the strategic consumers will 'optimize their own behaviour' according to the market trend in relation to pricing strategies (Talluri

and van Ryzin, 2004:182). This second view is more familiar in practice and hence more realistic as consumers behave in a way strategically. Additionally, in consumer segmentation choice, the company uses consumer value to maximize sales that qualify to improve the cash flow and cover overhead costs, while at the same time remaining attractive and competitive (Shapiro, Rangan, Moriarty, and Ross, 1987). However, when a company implements dynamic pricing, several other elements must be considered. The first concern examines the level of completion thus, the market condition. How the competition reacts to price changes and how this reflects to consumer purchase behaviour. Therefore, integrating information on competitor's pricing strategies would significantly increase and improve the modelling of buying behaviour. The second concern refers to consumer behaviour over time as mentioned above. Because of the Internet and the vast amount of information, consumers behave differently (Talluri and van Ryzin, 2004:183).

Considering, the increasing choice of travel products and services sold online, consumer behaviour affects profitability, and consumer segmentation is important in determining a company's success. Therefore, Marriott Hotels International recently developed a reservation decision system called 'Group Price Optimizer' (GPO). The web application works in three levels (a) offers optimal rate prices to consumer requests using demand segmentation forecasts with group rates that are based on dynamic daily market conditions, optimization techniques, and price-elasticity modelling moreover, (b) the reservation decision system optimizes group hotel rates for group business requests in which sales, catering and hotel reservations systems are integrated, and finally (c) also tracks and makes information available across many Marriott hotels (Hormby, Morrison, Dave, Meyers, and Tenca, 2010).

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Another issue that influences consumer behaviour is the online or offline availability of inventory information, the effect of inventory information on consumer behaviour. Consumers behave differently and the expectations have been raised when booking a travel product online. Online consumers expect real-time confirmation (Chaffey and Smith, 2013:149), and the supplier is better off displaying its inventory one unit at a time (Shen and Su, 2007).

Apart from inventory control, another interrelated issue that influences consumer behaviour is booking conditions. Because the purchasing travel process during the booking involves real-time confirmation and payment, when a consumer reserves a travel product, many accept a reservation policy, 'regime'. These reservation policies guarantee future availability for the seller, the profitability, and have an impact on how consumers behave to seller's dynamic pricing strategies. In a study by Elmaghraby *et al.* (2006), analyses two booking condition situations. Under the 'with reservation regime' the consumer purchases the travel product at price p_h. Under the second situation, the 'no-reservation' the consumer reserves however, purchases the travel product when he arrives at the establishment at price p_t. The authors find that the situation 'with reservation' generates higher revenues for the seller, but consumers are on less satisfactory conditions.

The Internet offers a significant impact on the purchaser – seller interaction therefore, it is necessary to identify and consider the principle of constructing a robust relationship connection with the consumers. The goal includes consumer online purchase intention hence, buying decisions, how consumers make online purchases and what antecedents influence their online purchase intentions (Wen, 2009). However, the researcher needs to mention that looking does not automatically lead to booking (Shao and Gretzel, 2010). Therefore, the

companies need to know the willingness to pay (WTP), how much their consumers are willing to pay for the provided services or travel products. Then the company must devise appropriate strategies to target the market segment according to different purchase behaviour (a) when they purchase (time frame), (b) how much they pay, measure the elasticity of demand and (c) which distribution channels they will use (Yeoman and McMahon-Beattie, 2011). Previous research has indicated that is not about offering the lowest rate to improve your occupancy, because the integration and development of the Internet have driven a wide-scale requirement of quality travel services. Therefore, modern tourists demand high quality products, quality travel services, information transparency, and finally value for their money (Mills and Law, 2004:117; Christian, 2001; Lubetkin, 1999; Samenfink, 1999). According to an industry report brought for Travelport by PhocusWright in 2012, consumers expect that improvements in technology should improve their travel experience. The report is a survey of consumer travel trends and the changing face of today's travel. Consumers take into consideration the vast travel options and the increasing available information through the unbundling of travel products, purchasing each component separately. The study specifies that consumers rely on multiple sources of information; hence, more than 25% of leisure consumers are using more than four websites to research and book travel. Moreover, consumers received advice through social networking sites, which are becoming popular such as review sites, in engaging the influence on the choice of suppliers and travel products (Rheem, 2012). Therefore, the Internet has changed the face of travel purchase and has brought choice to all consumers. Therefore, the OTAs focused on enhancing the competitive advantage and have developed the shopping experience. Consumers must feel

an enjoyable experience, a significant feel through the travel purchase process. To establish as a dominant booking channel, the OTAs has invested and successfully implemented behavioural pricing techniques by marketing their offerings and consumer interaction (Anderson, 2011). Furthermore, Anderson's study highlights consumer behavioural pricing techniques such as 'hotel freebies' offered by Priceline.com, where after the consumer books a participated hotel in the program, receives extra services 'free of charge'. These extra free service features vary from free nights, room upgrades, free meals, free Wi-Fi, free parking, to different other discounts etc. Additionally, behavioural pricing techniques include a 'strike-through' pricing approach (booking.com, expedia.com) where the supposed original price of the reservation researched hotel stay is crossed out, and replaced with a promotional rate for the stay. However, adjacent to the presentation of the original sale price – requires clear information related to any inadequacy of the original price offered services moreover, to assure consumers how the prices are calculated (NAD – National Advertising Division, 2012).

Nowadays, online reviews and User-Generated Content (UGC) influence even more consumer booking decisions, which are strong drivers of value. Online reviews and travel blogs influence consumer choice because the exchanged real-time consumer feedback often creates the fundamentals of the purchasing decision for their holiday choices (Buhalis and Law, 2008; Sigala, 2009). Kimes (1994) stated that trust would be higher if consumers have a full and clear understanding of the choices and restrictions upon purchase. Furthermore, consumer trust increases consumer commitment for the company. Berry (1996:42) argued that trust is 'the single most powerful relational marketing tool available to a company'. Using revenue management practices, a company

must operate in a way offering benefits to consumers. Therefore, online travel reviews (i.e. TripAdvisor) contribute to reputation building, as a 1% (percent) increase in a hotel's online reputation score contributes to a 0.89% (percent) increase on hotel average daily rate (ADR) (Anderson, 2012), to promote brand identity, and maximise revenue as real-time online word-of-mouth communication influences consumer behaviour. However, as trust has a significant pragmatic value (Baker, 2006:157), consumers feeling a lower degree of confidence about the company's services or travel products, can also spread negative online reviews, to engage in electronic word- of-mouth (eWOM) communication (Hennig-Thurau, Gwinner, Walsh, and Gremler, 2004) as they lose faith in the company in relation to unsatisfactory experiences (Antonella, 2012).

Revenue management focus is identifying the right price for a product, so companies have to provide a total experience for the consumer and provide a value proposition (Baker, 2006:143). Using revenue management, companies focus on optimisation of this value proposition, so according to Nagle and Holden (1995:8) to 'raise the consumer's willingness to pay a price that reflects the product's true value'. Therefore, companies using value-based pricing, which focuses on the consumer's perception of value, the worth of benefits or gains a consumer recognise as a result of acquiring a service, hence they perceive the value that you create for the service (Nagle and Hogan, 2002). Consequently, each consumer quoted a different price considered the value for the product being sold, the consumer belief, and willingness to pay for the product (Phillips, 2005:25). The consumer behaviour to purchase online is determined how they evaluate your product and the price in relation to the alternative choices.

3.5   Conceptual Definitions of Terms

Throughout the study, conceptual definitions for the main constructs and the sources for the definitions are utilized as follows:

Consumer satisfaction: the extent to which consumers consider the purchasing experience has met their needs and expectations during the purchasing process (Oliver, 1997; Cronin et al., 2000; Anderson and Srinivasan, 2003:125; Hudson, 2013:41; Sumaedi et al., 2014:21).

Consumer confidence: is the conditional probability to undertake a particular behaviour given the consequences (Blattberg, Kim, and Neslin, 2008:344) as a criterion that measures how the consequences are dependent on the antecedent. In this study, consumer confidence means that consumers who purchased a service are more likely to purchase again.

Consumer comfort: "a psychological state wherein a customer's anxiety concerning a service has been eased, and he or she enjoys peace of mind and is calm and worry free concerning service encounters with this provider" (Spake, Beatty, Brockman, and Crutchfield, 2003).

Consumer motivation: are internal drives that cause people to a particular behaviour to satisfy their needs (Hudson, 2008:41; Sheldon, Williams, and Joiner 2003:45).

Purchase intention: "intentions are assumed to capture the motivational factors that have an impact on consumer's attitudes and behaviors" (Fishbein and Ajzen, 1975:307; Ajzen, 1991) that they will perform the decision in question. In this study, purchase intention is defined as the consumer's intention to use the facility and purchase the service.

Price bargain - monetary benefits: "psychological satisfaction or pleasure obtained from taking advantage of the financial terms of the price deal" (Duman, Kocak, and Tutuncu, 2006; Grewal, Monroe, and Krishnan, 1998:48). In this study, monetary benefits in a purchase transaction, such as promotions, discounts, price cuts, freebies etc. form consumers' relationships with a service provider.

Experience - perceived self-efficacy: is defined as consumer's appraisal of their capabilities to produce designated levels of performance that are necessary to achieve an outcome over a given event (Bandura, 1998; Garlin and McGuiggan, 2002).

Negative emotions: negative emotions refer to failures in achieving a goal (Perugini and Bagozzi, 2001).

Revenue management is the science of maximizing profits through market demand forecasting and the mathematical optimization of pricing and inventory (Boyd, 2002).

3.6   Summary

Understanding the purchase consumer decision-making process and the key influences on consumer behaviour, companies can acquire the foundation as to how they can motivate and satisfy consumer needs. Moreover, consumer behaviour is significantly different according to the market segment. It is obvious that the business consumer behaviour is influenced from other factors than the leisure segment behaviour therefore, consumers exhibit distinct purchase decision-making behaviour during the purchase process.

The online environment has no geographical boundaries because consumers and competitors can browse from anywhere in the world and purchase the travel product. Consumers research travel products, compare prices and purchase from where they are at the time due to the online flexibility. Therefore, within the online environment the consumer takes the greatest role to creating and managing the relationships. However, Punj (2012) argues that there is no major difference on how consumers make decisions between traditional-offline and current-online environment purchase decision-making. When consumers are planning to purchase a travel product, they have to take in consideration internal and external factors applicable to the decision, which is influenced by several motivators and criteria (Fesenmaier and Jeng, 2000). In addition, Punj (2012) have classified two differences between offline and online consumers because the online purchase decision-making is unstructured (a) how the consumer uses the online environment to make purchase decisions, (b) the influences technology creates on the experiences of the consumer.

The study of Steinbauer and Werthner (2007:74) indicates that using the Internet as a tool of purchasing travel products online, the consumer's

behaviour is influenced from the efficacy towards online booking, past experiences using the Internet, usefulness, information search, and trust in travel websites. Moreover, for companies to develop interactive, effective online pricing and promotion strategies understanding consumer's perceptions, needs and motives during the purchase travel product decision process is a key factor in creating a successful and profitable online relationship. However, in Europe there are still markets where the consumer prefers to make all travel arrangements through traditional travel agencies, such as Germany (Klein, Köhne, and Örni, 2004). The consumers prefer the traditional travel agency because of face-to-face interaction and were more focused on services, friendliness, and the travel knowledge of the travel agents (Wolfe, Hsu, and Kang, 2004).

The growth and widespread use of the Internet as a distribution channel has affected the traditional consumer decision-making process, and has increased consumer exposure to travel product rates and service offerings. Therefore, consumers have more confidence about rate perception and pricing information. According to Baker (2006:141) understanding '*what*' consumers purchase, will provide the company with an incentive to exceed consumer's expectations, hence, will be able to charge premium prices. Moreover, understanding how consumer's purchase is important. Consumers purchase emotionally and they do like to perceive fairness so they feel that what they are being sold provides a value proposition. In light of using revenue management, a company may enhance profitability through the use of market segmentation pricing strategies and inventory management across different distribution channels. As revenue management is concerned with optimisation, emphasis must be given to the relationship between the seller and the consumer. In practice, this relationship

will improve profitability as meeting consumer expectations creates loyal consumers. The implication relies on consumer perception, as to how consumers react to the value proposition of the offered product or service. Nowadays, consumers have access to a vast amount of information therefore, consumers who wait to purchase may consider alternatives or make an optimal decision feasible. The way a consumer purchases a travel product must be regarded as dynamic, changing in relation to the consumer online experience, rather than static.

These theories define and examine functional needs as motivated factors that contribute to the understanding of consumer behaviour. Therefore, different motivating factors have a different level of impact in the stages of the decision-making process. Understanding individual factors in relation to the travel purchase process is crucial. This study is intended to identify the motivation and influences on the consumer behaviour of the online environment through the NYOP model. According to Jayaraman and Baker (2003), the use of the Internet has extended the reverse-auctions concept (buyer offer to the seller).

This chapter provides an outline of theoretical models and motivating factors influencing consumer behaviour. The impact has been presented in two areas (a) the traditional offline model and (b) the offline – online environment. In accordance with the previous chapter the literature review and the discussed consumer behaviour presented, the following chapter methodology creates the dissertation framework and the presentation of the three interrelated surveys.

4. RESEARCH METHODOLOGY

Methodology is derived from the Greek 'methodus (μέθοδος)'.
Methodology refers to the study of the procedures used to collect
and interpret information to reach the objective truth. Thus,
"method" implies that in order to attain some purpose, one should
follow a certain way.

Practical Tourism Research (Smith, 2010:18)

4.1   Introduction

As introduced in chapter one this research examines the application of revenue management at the operational level and the impact of the NYOP mechanism on the final consumer. This chapter describes the methods and techniques used to examine the aims and objectives of the research, as well as the context in which it will be undertaken. The chapter explains the survey methodology and hypotheses, which were called upon to answer the research questions, outlined in the first chapter, in detail. It presents all methods used to investigate dynamic pricing and the impact of the Name Your Own Price model on the service industry. Furthermore, it discusses the data collection methodology, which, due to limiting assumptions, may restrict their applicability. Moreover, it discusses the complex and challenging assignment that stems from working with 'real-time' data associated with inside business areas. As Ryan (1995:16) notes, 'the collection of data associated with consumer perception or satisfaction is a common challenge in tourism research'. Based on the above, the researcher has conducted two interrelated studies through online surveys, sent to hotels and travel industry executives, in order to test the research's objectives. The first structural survey (NYOP) provides a better understanding of the final consumer, whilst using the name-your-own-price mechanism and the extended role of social media in the booking procedure. Moreover, the chapter provides a

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detailed explanation on the data collection process, the response rate, the validation process, and the study analysis.

To summarize, this chapter is a review of the research methods employed in the study. Section 4.2, describes and explains the research philosophies, highlighting its strengths and weaknesses, whilst the researcher describes the overall conceptual framework, which is the examination of an expanded revenue management level's research model of relationships, in section 4.3. Next, in section 4.4, the researcher gives an overview of the research design, the reasoning behind the main types of research, and the research methods used in this study. To examine the aims and objectives of the research, a quantitative method was judged to be appropriate for this research. This chapter continues with the principles of the data collection methods and process in section 4.5, followed by the data collection framework and the design of the two interrelated surveys and their connection in section 4.6. In section 4.7, the chapter continues with the analysis of the conducted surveys, the surveys' purpose related to the research objectives, the connection of each section within the surveys, and, finally, an interpretation of the relevance of the survey questions and their expected answers in relation to the research objectives. Section 4.8, is an overview of sampling methods and of the methods employed in this study and section 4.9, discusses the critical role of validity and reliability during the data collection process. In section 4.10, the researcher presents an overview of the procedures of the data analysis and highlights the relevant techniques used to test the relationships between the variables in the survey-collected data. Section 4.11, refers to research ethics. Finally, section 4.12 is a chapter summary presenting its key points.

4.2   Research Strategy - Quantitative and Qualitative Research

According to Guba and Lincoln (1998) every researcher has a different way of looking and contributing to a study such as different values, perspectives, ideologies, which examining the assumptions underpinning them. Therefore, the choice of methods and the ways in which the research is evaluated have implications to constitute valid knowledge. Guba and Lincoln (1994) state that the origin for research are ontology, epistemology and methodology. Ontology is assumptions which concern the nature of the social phenomena, whereas epistemology is concerned about how the knowledge, its nature and forms can be acquired (Cohen, et al. (2007:26). In addition, methodologies, which results in selective perception in an attempt to a systematic procedure and structure of the research process (Phillimore and Goodson, 2003:13).

According to Easterby-Smith, Araujo, and Burgoyne (1999) in the methodology, there are two main research philosophies: positivism and phenomenology. Positivism is comparable to scientific research, studying the phenomena from the outside, while phenomenology has its roots in the social sciences (Veal, 2006:32). Furthermore, Gill and Johnson (1997) state that 'positivism is using hard data and structured methodology to measure the reality through objective methods, while phenomenology (or interpretivism) is concerned with methods that examine people and their social behaviour'. Given the two philosophies, the researcher has to decide which philosophical direction he wants to follow for their study. The direction is important for several reasons. It helps the researcher to select the research design according to the needs corresponding to their study. The quantitative research is mainly associated with the positivist philosophy, where the focus is on facts and formulated hypotheses to be tested

against data collected to support a certain behaviour (Altinay and Paraskevas, 2008). Quantitative research is utilized to answer questions about 'relationships among measured variables with the purpose of explaining, predicting, and controlling phenomena' (Leedy and Ormrod, 2001:94), in contrast to qualitative research, where the purpose is to provide answers about the nature of phenomena. Hence, Denzin and Lincoln (1994) mentioned that 'qualitative research provides a crucial perspective that helps scholars understand phenomena in a different way from a positivist perspective alone'. Furthermore, Veal (2011:34-35) categorized quantitative research into three approaches: (a) the hypothetical-deductive approach, which tests a pre-established hypothesis, (b) the statistical approach, which uses statistical methods and can be descriptive, exploratory, and / or deductive, and (c) the inductive approach, which is based on numerical data and its statistical measure presents the percentage and means/averages. Creswell (2003:3) highlights that 'the distinction between qualitative and quantitative research is framed in terms of using words (qualitative) rather than numbers (quantitative), or using closed-ended questions (quantitative hypotheses) rather than open-ended questions (qualitative interview questions).'

Bryman, (2011:26) argues that the distinction between quantitative and qualitative research is frequently unhelpful and misleading. He thinks that it is more helpful to distinguish between two stages of the research process: collecting data and analysing data. Guba and Lincoln (1998:195) argue that 'from our perspective, both qualitative and quantitative methods may be appropriate with any research paradigm'. Numerous other writers find the distinction between quantitative and qualitative research to be ambiguous (Veal, 2011:34; Bryman and Bell 2011:26; Layder, 1993:110), because it is almost

simultaneously regarded as a fundamental contrast by some writers and as no longer useful or even 'false' by others. Ryan (1995:29) argues that quantitative research brings reassurance about the validity and reliability of findings, and that the distinction is a simplification. Moreover, Bryman (2011) continues to say that quantitative research can be 'construed as a research strategy that emphasizes quantification in the collection and analysis of data.' The advantage of quantification is that it provides the researcher with a consistent benchmark. In contrast, qualitative research can be construed as a research strategy that usually emphasizes words, rather than quantifications in the collection and analysis of data. Nonetheless, it is important that research is perceived as systematic, rigorous, structured and as an honest process (Ryan, 1995). The main features of qualitative and quantitative research are presented in Table 4-1:

Table 4-1 Qualitative versus Quantitative Research

Qualitative versus quantitative research		
Comparison dimension	*Qualitative research*	*Quantitative research*
Types of Questions	Probing	Limited probing
Sample size	Small	Large
Information per respondent	Much	Varies
Administration	Requires interviewer with special skills	Fewer special skills required
Type of analysis	Subjective, interpretive	Statistical, summarisation
Hardware	Tape recorders, projection devices, video, pictures and discussion guides	Questionnaires, computers, printouts
Ability to replicate	Low	High
Training of the researcher	Psychology, sociology, social psychology, consumer behaviour, marketing, marketing research	Statistics, decision models, decision support systems, computer programming, marketing, marketing research
Type of Research	Explanatory	Descriptive or causal

Source: Ryan (1995) adapted from McDaniel Jr. and Gates (1993:188)

Saunders (2009:151) refers to quantitative and qualitative research as being used to differentiate both, data collection techniques and data analysis procedures. Moreover, he explains that a safe way to make the distinction between the two methods, is the focus on numeric and non-numeric data. Quantitative is a 'synonym of data analysis that generates or uses numerical data, while qualitative is a synonym of data analysis that generates or uses non-numerical data'.

Another comparison, which outlines the differences between quantitative and qualitative research in terms of three areas, is presented in Table 4-2:

Table 4-2 Fundamental Differences of Quantitative and Qualitative Research

Fundamental differences between quantitative and qualitative research strategies		
	Quantitative	**Qualitative**
Principal orientation to the role of theory in relation to research	Deductive; testing of theory	Inductive; generation of theory
Epistemological orientation	Natural science model, in particular positivism	Interpretivism
Ontological orientation	Objectivism	Constructionism

Source: Bryman (2011:28)

According to Riley and Love (2000), the tourism industry mainly embraces quantitative methods instead of the qualitative research because of the scientifically justified approach of the quantitative research. According to Decrop (1999:157), tourism research has been blamed for lacking the tenets of 'good

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science'. Specifically, he argues that qualitative researchers often fail to explain how and why their methods are sound. Riley and Love (2000) claimed, in conclusion, that it 'is important to keep in mind that the tourism industry is economically driven, and thus has a distinct place for quantification'. Moreover, Walle (1997) stresses that many other researchers have written off qualitative research. While such statements may reflect also for different research areas and not only for the tourism research, it is assumed that both research methods possess weaknesses and advantages. Holloway (2004:84) associates such weaknesses in the statistical reliability of the quantitative research. Quantitative research mainly uses questionnaires as an instrument of collecting respondents' answers. Therefore, statistical significance is based on participants' motives, honesty, and accuracy. There is no way of determining the unaltered truthfulness of any statement. Qualitative research emphasises the in-depth research of individual perceptions, the results being valuable, and examinations go deeper than the external motives of responses generated in structured surveys. Therefore, Walle (1997) suggests that two equally respectable paths exist and should be utilised properly. Understandably, the issue of which method is appropriate for tourism research is debated among the researchers. A study conducted by Dunn and Wickham (2012) between 2000 and 2009, found that 53.9 per cent of research on tourism, published in articles, employed quantitative methods and 15.9 per cent qualitative methods, whilst the remaining employed a mixed method or were conceptual in nature. At the same time, this study also observed an increase in the amount of qualitative research during the investigation period. However, according to a number of researchers, this dominance of quantitative methods challenges the

investigation of human interactions in a development that is fundamental to tourism activities (Dunn and Wickham, 2012).

For this reason, Bryman (2011:628) recommends the combination of qualitative and quantitative research, which allows the researcher to capitalise on the strengths and weaknesses of each method. The integrated methods are described as 'mixed methods' or 'multi-method' (Bryman, 2011; Veal, 2011:142). The mixed methods approach examines two or more research strategies to generate answers to the research questions. This is the concept of triangulation. According to Veal (2011:143), 'the use of more than one research to gain or complete understanding of the issues being investigated' is a triangulation. Furthermore, Decrop (1999:158) describes the triangulation as a method *'looking at the same phenomenon, or the research question, from more than one source of data. Information coming from different angles can be used to corroborate, elaborate or illuminate the research problem. It limits personal and methodological biases and enhances a study's generalizability'*. Denzin (1978) refers to four types of triangulation: data, method, investigator, and theoretical triangulation.

The method employed in this study is quantitative research. The research is based on industry practice data. Using quantitative research, the researcher provides a systematic approach to justify measures of the variables. Using quantitative research, the researcher measured: confidence and satisfaction level of consumers using the NYOP model, consumer motivation and intention regarding the NYOP model, willingness to pay in relation to motivation and intention of using the NYOP model, and consumer demographic characteristics.

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Furthermore, the researcher measured the implementation level of dynamic pricing within the hospitality industry.

Table 4.3 indicates a thorough explanation of the study research objectives and the links to the employed surveys.

Table 4-3 Research Objectives and Link to the Surveys

Research Objectives	Survey
1. Examine consumers' behavioural intentions on their willingness to pay (WTP), whilst using the NYOP method to book a hotel room.	Research Survey One – Name Your Own Price (NYOP) Survey Chapter Five
2. Examine the extent of perception, using the NYOP model. The influence that the NYOP has on the consumer's overall satisfaction, and their confidence when they purchase travel products, as well as the effect that price factors, reference prices, and the number of bids have on the use of the model.	
3. Examine whether or not the availability of posted reference prices impacts the consumer's booking pattern, when using the NYOP model.	
4. Examine the use of revenue management and dynamic pricing methodologies and the extend of their success in the hospitality industry, as well as their behaviour towards the RM framework.	Research Survey Two – Revenue Management and Dynamic Pricing Methods in Hotels Chapter Six Chapter Seven
5. Investigate the impact of dynamic pricing mechanisms, used by hotels, to model consumer behaviour, creating pricing strategies related to target market segmentation.	
6. Examine pricing methods used to influence consumers when purchasing a travel product online, through online travel intermediaries.	
7. To examine the relationships, how social media used as a distribution channel to encourage consumers to utilize direct bookings through pricing techniques. How this impact revenue strategies and profitability.	

Source: Author

4.3 Conceptual Model Development

The present section proposes a conceptual research framework. According to Miles and Huberman (1994), a conceptual framework explains, graphically or in narrative form, the main things to be studied and the presumed relationships among them. To exercise the conceptual framework, we are focusing on four elements: (a) exploring the relationships, (b) identifying concepts / phenomena to be studied, (c) defining concepts, (d) deciding on how the concepts might be measured (operationalize concepts) (Veal, 2011:63-67). Revenue management is divided into two principal models, called pricing-based RM and demand model (Talluri and van Ryzin, 2004; Phillips, 2005). The current study examines an expanded revenue management levels research model of relationships (Figure 4-1): (a) the relationships between the operational revenue management levels within the online travel environment, (b) the relationships between the operational revenue management levels, the extent and the usage and success of those methodologies in the hospitality industry, (c) the consumer's perception and acceptance of the Name-Your-Own-Price (NYOP) model as part of the RM operational levels, (d) the relationships between the operational revenue management levels and social media, used as a distribution channel, and (e) the relationships between the way the consumer plans and consumes holidays, using social media, their behaviour, and the measurement of the consumer's comfort level to book online. Utilising the conceptual framework, the current study will focus on the consumer's perception and the implementation of revenue management and dynamic

pricing within the industry. Figure 4.1 illustrates the working revenue management framework.

Figure 4-1 RM Framework - Expanded RM Levels of Decision
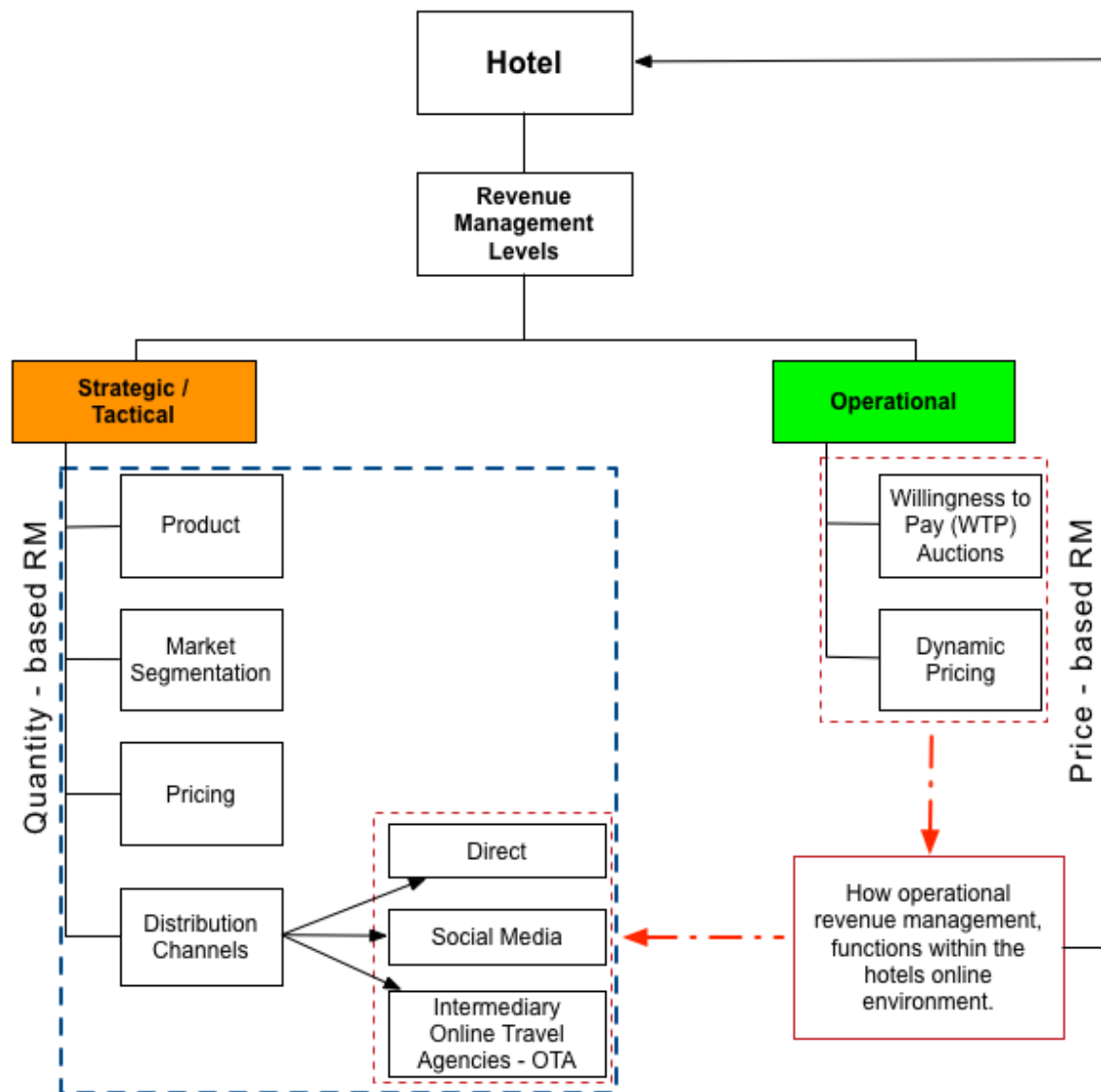
Source: Author

4.4   Research Design

The nature of this research represents a complex challenge. This is an empirical study were the researcher employed two interrelated studies. Thus, we have to build and verify some methodologies to process the research planning. As Kent (2007:12) notes, research design is a unique combination of design elements and will often involve mixing different methods and techniques in the same project. The researcher should follow a process of several sequential steps, starting with the identification of the problem and ending with the evaluation of results, including reported results and recommendations (Ryan, 1995). However, the decision to adopt a research method emphasizes that other key decisions will need to be completed. This section discusses those decisions, as well as their research philosophy and approaches. It provides an outline of the research design and approach. Revenue management has primarily been researched by academics and practitioners using an operational research (O/R) approach. They used diverse methods related to theoretical or empirical methodology. More specifically, a fundamental factor of these methods, either quantitative, qualitative, or a mix of both, has been the degree of practice, which provides a validation process of the questions being asked. To enhance the application of revenue management and dynamic pricing implementation within the hospitality industry, we created an extended, empirical study. Collecting 'real world' information about practices in RM, recognizes the nature of the state of the art in RM. This study examines the revenue management dynamic pricing performance and successful adoption within the industry. The tourism industry is predominantly associated with traveller's motivations and experiences. From this perspective, it becomes an 'experiential' phenomena, thus tourism research might seek to investigate the

hypothetical relationships between causal and determined variables (Ryan, 1995). Furthermore, Ryan (1995:9) outlines that tourism would seem to defy empirical research in the sense that the notion of such an objective assessment of relationships between cause and effect is inadequate when considering the nature of tourism as an experience of place and events, moreover, as an interaction between the consumer and the supplier. Therefore, empirical research is an investigation based on observation or information from the 'real world'. It involves the collection and/or analysis of data, which may be quantitative or qualitative, primary or secondary (Veal, 2014:33; Bruns, 2007). It entails an enhancement and coexistence of theory building and verification and is formed by the conceptual framework or some sort of theory. However, it is unusual for any research project to be exclusively empirical (Veal, 2014:33). Empirical research can deliver reliable insights into research issues and bridges the gap between academics and industry. However, working with such information entails difficulties; starting with the collected data; the difficulty of finding measurement scales, using the same empirical indicators to measure the validity construct; up to determining to which extent the statistical methods of analysis apply. Therefore, the characteristics of an empirical research design are crucial in order to achieve the necessary validity and to obtain quality results.

When trying to explain a research process, the findings from quantitative research can be identified as one of three functions (Churchill, 1995): (a) exploratory, (b) descriptive, and (c) causal (or explanatory).

Exploratory research is exercised by the researcher as the initial step at the beginning of an investigation (Iacobucci and Churchill, 2010). It emphasizes the

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disclosure of ideas and insights to generate possible explanations (Churchill, 1995). Ryan (1995:26) also adds that the purpose of such research is to examine a situation in order to identify key variables, and to discern factors, which could be important elsewhere.

Descriptive research is considering the relationships between two variables or the frequency in which something occurs (Iacobucci and Churchill, 2010). In descriptive research we seek to discover, describe, or map patterns of behaviour of the constantly changing nature of the phenomena (Veal, 2011:6).

Causal research is used to measure a certain behaviour, which a variable might be causing. It is widespread in the tourism industry, as it is a situation where the researcher controls independent variables. By changing the variable, they seek to assess its effect upon the determined variables (Ryan, 1995). Moreover, Kent (2007:429) adds that causal analysis is a study of the way in which some events or circumstances can produce or bring about other events or circumstances, meaning that the existence of a correlation or an association is fundamental and that the independent variable must be placed before the dependent variable. The effect will follow afterwards.

According to Kent (2007:12), most research in practice will be some combination of exploration, description, and investigation of the relationships between variables and causal analysis.

This study takes into account the above research process proposed by Churchill (1995), in addition to the discussion related to the structure of the empirical research. The researcher uses descriptive statistics to describe the

characteristics of the participants and percentages, mean and standard deviation in an attempt to measure the frequencies of different variables used. Furthermore, we measure consumer behaviour associated with the satisfaction and the confidence of the respondents when the NYOP model has been used to purchase travel products. These findings are connected to the causal research as we have control over independent variables. Then, we evaluate the impact of the findings, looking at the associations and correlations between independent and depend variables.

Finally, this study is built on an empirical research approach, which examines the applicable relationship between various revenue management levels. Therefore, as such, this research is exploratory to a certain degree. It is used to determine which areas one needs to follow to bring the application of revenue management within the industry to another level concerning consumer satisfaction in conjunction with the company's fair share of revenue within a set of performance indicators in a competitive business environment.

Figure 4.2 illustrates the structure and relationships among the research design.

Figure 4-2 Research design diagram
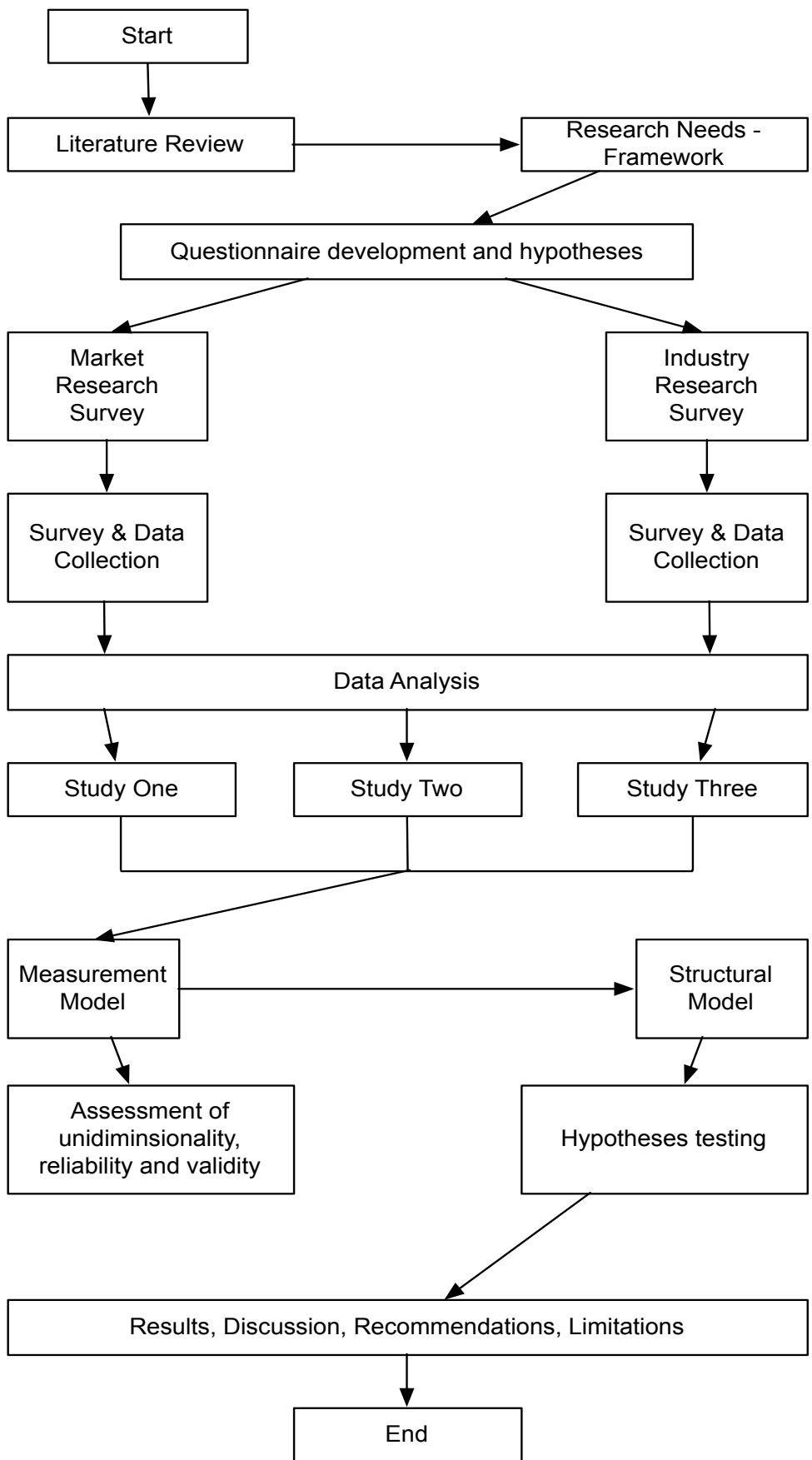
Source: Author

4.5   Data Collection

Using a data collection process, this study discusses the practice to identify how the operational revenue management functions are working at the time of booking and the potential acceptance within an online environment. The development of the Internet has opened up alternative modes in data collection and offers unique new capabilities for the use of online methods for research (De Vaus, 2002:123-124). While traditional research methods (such as face-to-face interviews, telephone interviews, and postal questionnaires) have a good reputation and accuracy, the improved Internet modes create a great new option (De Vaus, 2002). In leisure and tourism research, questionnaire-based surveys are the most frequently used method. Questionnaire-based surveys are used when the behaviour of a population is used as a source of information and we require quantified information. Moreover, Leedy (2001:196) notes that survey research is a picture of a moment in time where the researcher finds a sample of willing respondents for an ongoing activity. One type of questionnaire-based survey is the web-based survey. It is constructed using Internet based survey software. The respondents access the questionnaire through a web-based site or an attachment of an e-mail. The respondents complete the questionnaire electronically and their responses are automatically coded. Moreover, the data can be downloaded to databases and can then be summarised through the usage of charts and tables and they are available for statistical analysis (De Vaus, 2002; Lyer, 1996). The researcher endeavours to explain the respondent's behaviour, characteristics, and attitudes throughout, in addition to the reasoning behind the level of importance of the research questions. The popularity of web-based surveys is rising due to several main reasons. The main strengths of online surveys are (a) their low cost, (b) the

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convenience for respondents (they can move along at their own pace), (c) flexibility to constrains, (d) their short deployment and return times, (e) real-time access and automation, which makes the analysis easier, (f) anonymity (respondents may answer thoughtfully and without distraction) (Kent, 2007, Iacobucci and Churchill, 2010). Considering the above, it is obvious that there are well-defined advantages using online surveys as a research method. However, there are also limitations, such as (a) accuracy (there are concerns of sampling frames), (b) non-response rate, which threatens the validity and reliability of online surveys, (c) the impossibility of stipulating a clarification on an ambiguous answer (during an in-depth face-to-face interview, an interviewer could seek it when appropriate (Iacobucci and Churchill, 2010:198; Kent, 2007:194; Leady, 2001:197). Given the difficulty of collecting responses of real time data because of the insights' exploration that relate to business areas, the researcher acknowledges the challenge of non-response, also associated with surveys.

In this study, the researcher is using survey questionnaire as a straightforward structured approach of collecting information for analysis. A range of methods can be utilized to study and describe the characteristics of a set of cases. De Vaus (2002:5) describes 'survey research as widely regarded as being inherently quantitative and positivistic, providing certain types of factual, descriptive information and is contrasted to qualitative methods that involve participant observation, unstructured interviewing, case studies, focus groups, etc.'. The researcher collects information about respondent's behaviour, using a variety of structured systematic sets of data and techniques. Kent (2007:137) argues that, because the survey is designed to understand the distinctive dimensions of the study, there are no 'guidelines' for the number of questions required.

The data was collected in three different timeframes between September 02, 2014 and September 30, 2015. The first study (NYOP) utilized web-based quota sampling from a worldwide consumer panel. A scenario was presented to them in order to familiarise them with a purchasing situation, using the NYOP model. A research methodology considers different techniques and tools which produce and verify knowledge. Thus, the scenario is a bespoke set of conceptual contents by which people can articulate trends, uncertainties, and rules over a certain amount of time, for the purpose to provide inputs for further work (Han, 2011). Moreover, the scenario research methodology is a complementary toolkit that can challenge, generate arguments, complement, and live alongside other research approaches used in this study such as survey based on statistical empirical data sets (Han, 2011, Ramirez, Mukherjee, Vezzoli, and Kramer, 2015). According to the defined scenario, they were to book a service through an online travel intermediary (OTA) (see NYOP questionnaire - Appendix A).

The participants in the second study were recruited from the hospitality and tourism industry, based on their position. Only participants holding executive positions or positions with direct influence on decisions pertaining to revenue management and pricing strategies were used for the study. The research questions used in this study are identified in Appendix B. Lime Survey, a web-based software, was used and the research questions were posted online.

4.6   The Data Collection Framework – Design of the Survey Instruments

This section presents the two interrelated study designs. The researcher considered the relationships between the studies and verified them through tested concepts. This section outlines the unit(s) of analysis: sampling, access, and data. The first survey (NYOP) was conducted directly through the individual consumers. The survey provides a better understanding of the final consumer while using the name-your-own-price mechanism and the extended role of social media in the booking procedure. The survey consists of three sections: (1) demographic characteristics, (2) Name-Your-Own-Price (NYOP) model, and (3) general Information (see Appendix A for the questionnaire). The second survey examines revenue management and dynamic pricing in the hospitality and tourism industry and consists of five sections: (1) demographic characteristics, (2) general information, (3) application of revenue management and dynamic pricing approaches, (4) Name-Your-Own-Price (NYOP) model, and (5) RM and social media. The survey's sampling was distributed in the hotel and travel sector and in-depth data was collected from revenue managers and executives working across the tourism industry, in an attempt to measure the usage of pricing strategies within the industry (see Appendix B for the questionnaire).

Both surveys were conducted online via the Lime Survey software. This research is an empirical study with data from the hospitality and tourism industry, and as such, the respondents were members of the industry. The sample was taken from the researcher's LinkedIn connections and other members of the industry known by the researcher. The questionnaires were opened to several LinkedIn groups associated to the tourism industry, and

particularly, to diverse revenue management/pricing groups on LinkedIn. Because empirical research relates to 'real world' information, the collected data of the NYOP model study is associated with a degree of difficulty. Therefore, the researcher has employed Limesurvey and MTurk, marketplaces for online work, to further collect data. To help the questionnaire flow, the researcher notified all participants in advance of the survey instructions. Moreover, he clarified the nature and function of the research, namely, to examine the use of dynamic pricing as part of the revenue management strategy and the consumer experience using the willingness to pay model (WTP) for a product or service. This was done on the first page of each survey (see Appendix A for the instructions). On that same page, the participant was also informed of the survey's ethical standard. They were assured that '*the information supplied will be strictly confidential. Your responses will be seen only by the researcher*'. It was clearly highlighted that '*by answering the questions you are agreeing to participate in the research*'. Furthermore, participants have been informed that they could decide not to participate in the study by telling them that '*if you would like to leave the survey at any time, just click "Exit and clear this survey*'. The participants have been informed about the length of the survey and they could respond at their own pace. Those instructions were available to the participants online during the entire time spent answering the survey questions. After the participants answered all of the questions, an appreciation message '*Thank You for the participation in this research*' appeared on the computer screen.

Before the questionnaires were used, a pilot study was undertaken. The industry questionnaire was pre-tested, using three industry executives because of their experience. They were to test the survey measurement scales and

make sure that they were meaningful, congruent with the industry terminology, clear, and valid. Based on the results, the researcher modified the questions and the measurement items. The suggestions mainly referred to the terminology, as both surveys used a wide range of terms recognized mainly by professionals. Moreover, some modifications were made to the instructions to participants, to ensure the participants that the responses were anonymous. The purpose of a pilot survey is to enable the researcher to try out the questionnaires so that respondents will have no problems when answering the questions (Saunders, 2009:394). This provides an indication of the validity of a questionnaire.

Figure 4-3 illustrates the research approach. It provides an overview of the interrelated studies and their connections.

Figure 4-3 Research Approach - RM & Dynamic Pricing Studies
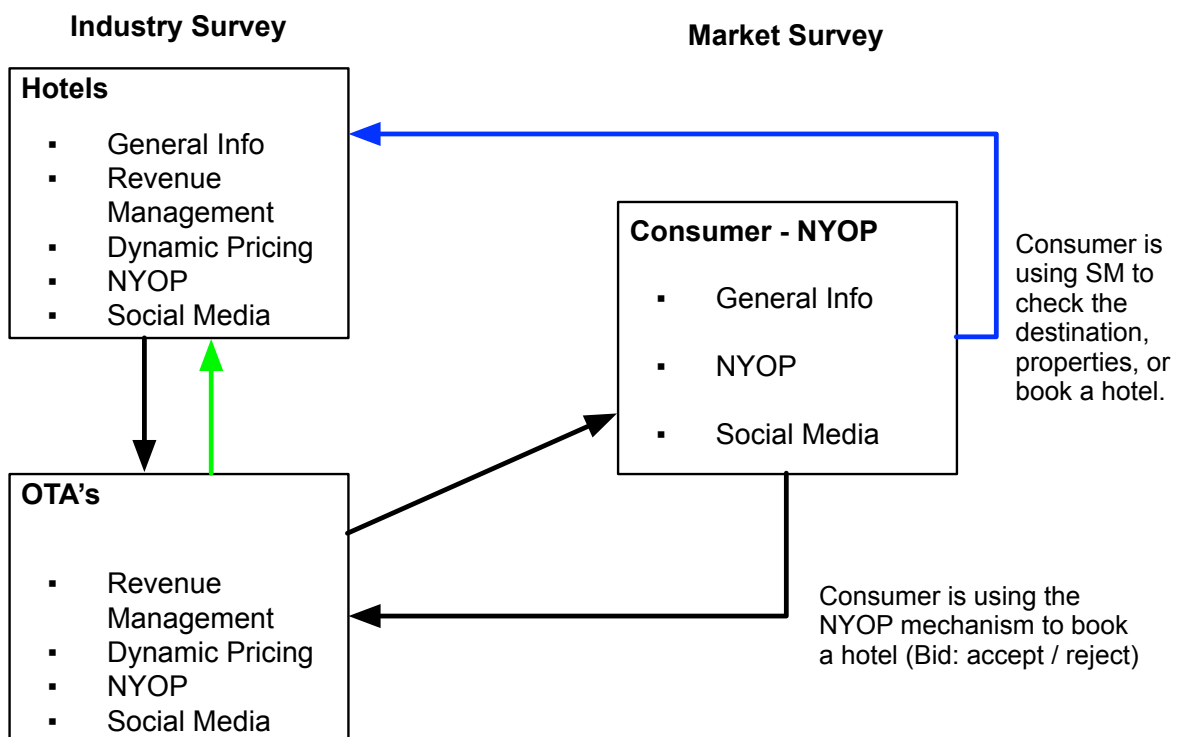
Source: Author

4.7   The Research Studies

Based on the research framework associated with the revenue management operational levels and the previous theoretical research discussed in chapter two, the researcher designed two surveys to examine the research objectives and provide evidence to support the research aim, stated in the first chapter. The collection methodology and the data itself, which is based on data from the hotel day-to-day operation and consumer interaction, provide a starting point that encourages a systematic analysis. Moreover, they provide new insights into a company's practice. The analysis of the interrelated surveys, sampling data and collection methods, and the statistical analysis methods, used for each survey separately, are discussed in the following sections.

The data collection involved soliciting participation from industry colleagues who held a senior management position at targeted hotels or online travel agencies at the time of the survey. Since the initial respondent rate for the second study was weak, the researcher sent out multiple reminders via email, phone calls, and in person, to increase participation.

4.7.1   Study One - NYOP (Name-Your-Own-Price) Model

The first study is a market research directed to the final consumer. The study has been conducted via a web-based survey questionnaire, which measured the exposure and the acceptance of the NYOP model. Fundamentally, the purpose of the study was to provide evidence of the consumer satisfaction and their confidence, measuring their perception, using the model. Using the NYOP model, the reference price is not available; neither is the accommodation type. Hence, the opaque approach, where the consumer provides a flexibility

regarding the accommodation type, was compared with the traditional model, where both, reference price and accommodation type are available. Additionally, the study examines how the price factor (WTP) and the number of bids, as two different types of functions, are reflected when the consumer is using the model.

Figure 4-4 illustrates the functional approach of the name-your-own-price (NYOP) mechanism when a consumer uses the model to purchase a product related to accommodation or a flight ticket.

Figure 4-4 The NYOP Approach of Booking
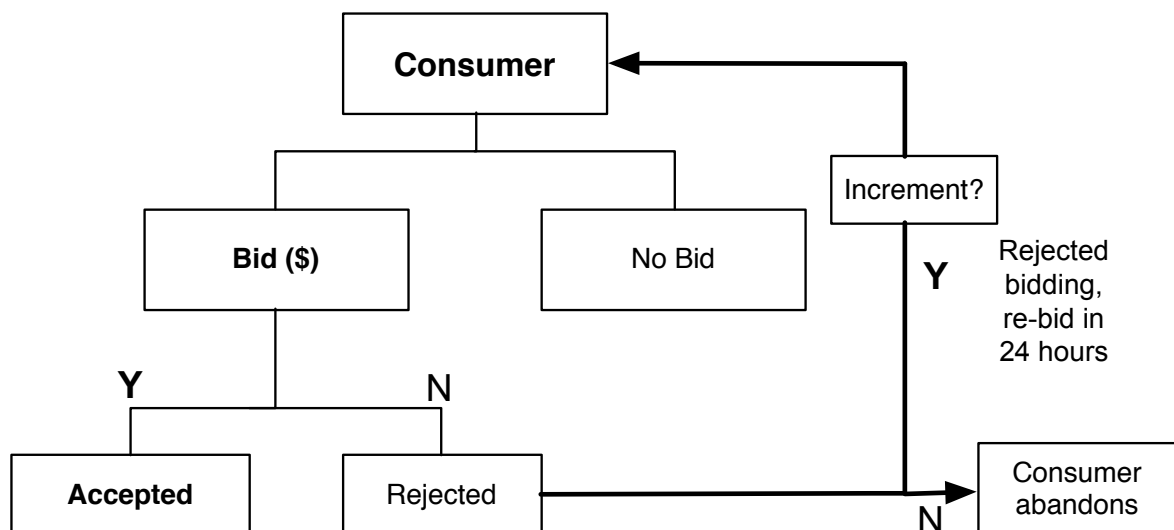
Source: Author

The Name-Your-Own-Price (NYOP) model has become synonymous with an online channel promoted mainly by priceline.com. The NYOP model works like a reverse auction mechanism, where the consumer suggests a price for a certain product (their willingness-to-pay (WTP)) and the seller has the possibility to accept or reject the offer. The property has to set a threshold price, *p.* If price

p is lower than the consumer's offer (WTP - bid), the reservation is materialized and a transaction occurs. The property receives p, the consumer pays the offered amount, p_c, and the provider (Priceline.com) keeps the difference $p_c - p$ plus a margin as profit. (Priceline has set a minimum margin, that is, $p_c - p >$ minimum margin) (Anderson and Wilson, 2011). In case of rejection, the consumer has the chance to rebid for the same product after a certain time period.

Based on the above discussion, on how the NYOP mechanism works and on illustrated revenue management framework and the expanded revenue management levels of decision (Figure 4-1), the proposed conceptual framework for this study is presented in Figure 4-5. This study investigates relationships in regards to the motivation and intention of consumers to use the NYOP model as a booking mechanism to purchase travel products and services.

Figure 4-5 The Proposed Conceptual Framework – NYOP
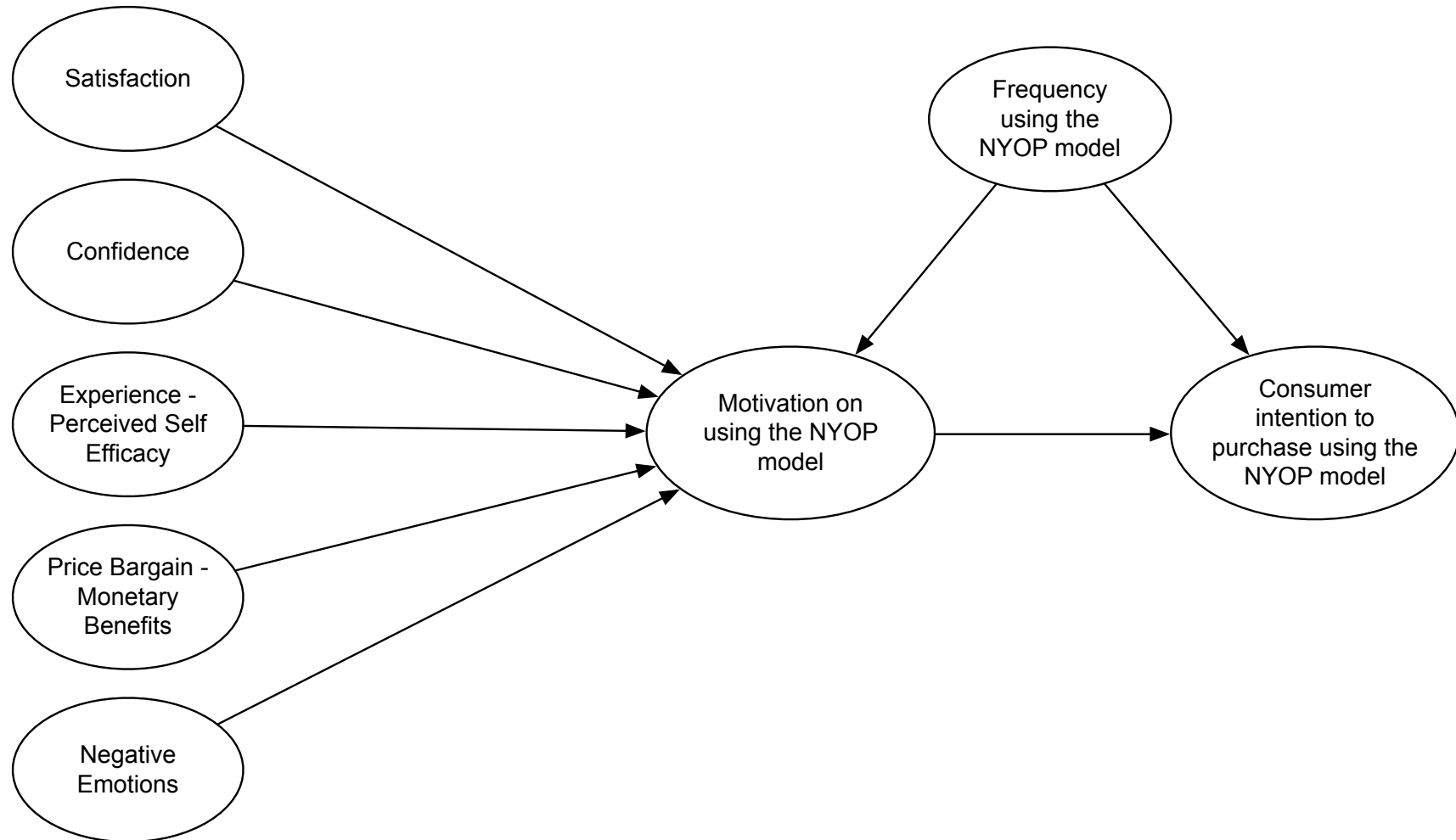
Source: Author

4.7.2　　　　Study One – Survey Instruments

The survey covered 15 questions and was divided into three sections: (1) demographic characteristics, (2) Name-Your-Own-Price (NYOP) model, (3) general information (see Appendix A for the questionnaire). The survey included two filter questions. Before starting the survey, the participants were asked to continue and answer the survey, only if they had previously used the NYOP mechanism to book any type of service related to the hospitality and tourism industry, such as hotel accommodations or a flight ticket. Moreover, after the participants had answered all of the questions and submitted the questionnaire, a message, extending the researcher's appreciation for participating, appeared on the respondents' computer screens.

In this study, the researcher has used a combination of answering styles. The model consists of eight constructs: satisfaction, confidence, negative emotions, price bargain (monetary benefits), experience (self-efficacy), motivation, intention, and consumer bid behaviour. Also, moderators (control variables) were used in the first study (Table 4-4). The moderators were demographic characteristics, such as age, gender, income, and the frequency of using the NYOP method to purchase online travel products. Moreover, the study included open-ended questions and closed questions as part of the quantitative research. The researcher used combination of a binary scale format (0 and 1), and a multi-category answer format of nominal, ordinal, and summated rating scales of Likert-type scales (using a 1 to 7 points scale) to indicate the degree of agreement of the participants.

The first section of the survey obtained personal demographic information, such as a person's age, gender, educational background, occupation, annual household income, and region of domicile, used to control variables related to the respondents (questions 1-6). The sample age ranges were distinguished by decades using these ranges: (1) 18 to 30 years, (2) 31 to 40 years, (3) 41 to 50 years, and (4) 51 years or more. The age scales are classified in such a way that they fit into one category, as a single characteristic, along with the scale value.

The second section of the survey examined the NYOP model, which allows customers to have more impact on the amount they are prepared to pay (WTP). In order to ensure that participants in the survey understand the nature of the study, which is, to examine online consumers' behaviour, the researcher provided a brief explanation regarding the NYOP model, as well as a specific scenario. In this scenario, the participants were to book a travel product and state their WTP. The scenario presented to the participants at the start of the second section of the survey was as follows:

> *"The NYOP model (Name-Your-Own-Price), allows customers to have more impact on the amount they are prepared to pay (WTP). Instead of posting a price, the seller waits for a potential buyer's offer that they can then either accept or reject. In return, consumers agree to varying degrees of flexibility in the brand and product uncertainty features they receive for their offered price. Suppose, you were to book a travel product (hotel room or flight). You have to state your willingness to pay (WTP). After you placed a bid (WTP), the online operator, using the NYOP model, searches for any hotels willing to accept your price (WTP).*

If the operator confirms a hotel, your credit card will be charged and you cannot cancel or change dates. In case your bidding is not successful, you would not be allowed to bid again for the next 12 hours. Bear this in mind, as you respond to the following questions."

The questionnaire included two filter questions. The first filter question seven (Q.7) asked the participants if they had ever booked a hotel or flight using the NYOP model. If the participant's answer was positive (YES), the survey allowed her/him to continue to the next question (question 8), which is the first question of the second part and measures how often the respondent has booked a hotel, using the NYOP model. This question was used as a moderator (see Appendix A). To measure the question, a 4-point scale with the following units was used: 'several times a year,' 'several times a month,' 'once a year,' and 'less than once a year.' The results will help us understand the frequency of using the model. The repeated use of the NYOP model equals partially to the customer's satisfaction, at least for one factor.

In the second section, starting with question nine (Q.9), the respondents were asked to answer questions to measure the five construct categories: satisfaction, negative emotions, confidence, experience (self-efficacy), and price bargain (monetary benefits) relating to the consumer purchasing behaviour, using the NYOP model. A 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree), was used to measure the participants' responses.

The first variable, satisfaction, examining the participants' satisfaction when using the NYOP model, was assessed with five statements: 'I feel satisfied using the NYOP model,' 'I feel satisfied with the purchased product's quality

(hotel booking) when using the NYOP model,' 'I feel satisfied with the context choice of hotel products when using the NYOP model,' 'I feel satisfied that the company understands the value consumers place on the products or services and that they set their minimum rates accordingly,' and 'I am happy when I am able to book travel products to a lower price than I expected.' The second dependent variable, confidence in the use of the NYOP method, was a construct that was measured on a 7-point Likert scale, from 1 (strongly disagree) to 7 (strongly agree), applied to the following five statements: 'I feel confident using the NYOP approach to book a hotel room,' 'I believe that the agencies using a Name Your Own Price approach are selling their products to lower prices,' 'I know that using the NYOP approach requires a degree of flexibility (location, non-cancellation, etc.),' 'I know that using the NYOP approach creates a reservation uncertainty (confirmation),' and 'I feel more confident with my willingness to pay (WTP), when I know the reference price.'

The construct, negative emotions, was measured by responses to the following three items: 'I feel uncomfortable using the NYOP approach,' 'I regret booking a hotel room or purchasing travel products using a bid approach,' and 'I felt confused while purchasing travel products or services using the NYOP approach.' A generally higher score reflects to a higher agreement with the statement in question.

The next dependent variable, price bargain (monetary benefits), was assessed on the following related items: 'I obtained better prices using the NYOP model than through other Online Travel Agencies,' 'I obtained discounts that most consumers don't get,' 'I obtained better prices using the NYOP model instead of booking through an Online Travel Agency that also offered extra freebies,' and 'The confirmed price was according to the value of my willingness to pay.'

Finally, the experience (self-efficacy) construct was measured with three items: 'I know where to find the information I need for the manipulation of the bidding prices prior to making a bid,' 'I always check hotel prices through other distribution channels, such as Online Travel Agencies, to ensure I will get the best value,' and 'The quality and amount of information using the NYOP approach have a significant impact on my choice.'

The second part of the survey included questions regarding motivation and intention to use the NYOP as booking mechanism. All items for the two constructs were measured using a 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). Motivation was measured with four items: 'I prefer to search hotel deals before I chose which online distribution channel to use to make a booking,' 'It is likely that the NYOP approach I chose is better than the Online Travel Agencies method of booking I am currently familiar with,' 'I am likely to find the best prices, purchasing travel products or services online,' and 'I am likely to purchase travel products online from the distribution channel with the best prices.'

To measure intention, three items were used: 'I am always using an online distribution channel to purchase travel products or services,' 'In the future, I plan to purchase travel products or services using a NYOP approach website,' and 'Using the NYOP approach, I am expecting high product quality for the money I spend.'

Further along, question ten (Q.10) is an open-ended question, were respondents were asked to define their estimation of a price (WTP), stating a specific dollar amount for a bid when booking a hotel in London. The respondents received specific criteria for the booking, namely the period of year (July 2015 - middle-high season for most hotels in London), the hotel category

(four star - 4 stars), the location (city centre), and, at last, a posted price via an online travel agency (OTA) for the same criteria. This question measured the respondents' willingness to pay (WTP) and their sensitivity and reflection on the factor reference price when using the NYOP model. The respondents' opinion about WTP and the posted price for similar criteria, have acted as a comparison. The results will act as an indication of price heterogeneity within the respondents' segment, which shows the supplier how to further manipulate the price discrimination (accepted bid) within the consumers' segment, resulting in a prospective profit increase. Hence, question ten (Q.10) works in combination with question eleven (Q.11), where the respondents were asked to specify their bidding behaviour in contrast to the OTA posted rate. The respondents' opinion is twofold. First, the question requests the respondents to think about their willingness-to-pay, giving them specific variables, and, second, it works as a price comparison between the two approaches that stimulated value elicitations. The uncertainty of the price threshold affects the bidding process in contrast to the traditional approach, where the availability of the external rate works as a confidence factor. The question aimed to provide evidence as to the sensitivity between the placed bid rate and the reference price offered through the OTA's channel. The results will provide the researcher with the following information: does the NYOP model behaviour benefit the final consumer in comparison to the OTA's posted prices?

In addition, in question twelve (Q.12), the respondents were asked how they placed the bid, which was the motivating factor, and whether they had any price information in advance, which helped them to calculate and place the bid. The purpose of the question was to control and investigate whether the respondents have had any knowledge of the market behaviour (*middle-high season in*

London) before placing the bid, or if they had done any investigation on the destination prices in relation to the demand and supply, checking the hotel rates with similar criteria, given to them previously by online travel agency (OTA) websites. Finally, which of the provided factors was an influential factor and helped the respondents through the whole approach, before placing a bid? The above discussion examines the consumer behaviour before using the bidding model and the external factors that help to articulate the bidding price information.

The final section of the survey includes general information, namely the category of properties usually booked online, any membership of an online travel agency loyalty program, and the respondents' search behaviour before purchasing a travel product. How many different distribution channels does the respondent search before to proceeding with the reservation as such, using an OTA?

Table 4-4 Constructs and Items of the NYOP Model Survey

Item code	Constructs and Measurement Items
	Satisfaction
SA1	I feel satisfied using the NYOP model to book a hotel room or purchase travel products.
SA2	I feel satisfied with the purchased product quality (hotel booking) when using the NYOP model.
SA3	I feel satisfied with the context choice of hotel products when using the NYOP model.
SA4	I feel satisfied that the company understands the value consumers place on the products or services and that they set their minimum rates accordingly.
SA5	I am happy when I am able to book travel products to a lower price than I expected.
	Negative Emotions
SANE1	I feel uncomfortable using the NYOP approach to book a hotel room or purchase travel products.
SANE2	I regret booking a hotel room or purchasing travel products using a bid approach.
SANE3	I felt confused while purchasing travel products or services using the NYOP approach.
	Confidence
CO1	I feel confident using the NYOP approach to book a hotel room or purchase travel products.
CO2	I believe that the agencies using a Name Your Own Price approach are selling their products to lower prices.
CO3	I know that using the NYOP approach requires a degree of flexibility (location, non-cancellation etc.).
CO4	I know that using the NYOP approach creates a reservation uncertainty (confirmation).
CO5	I feel more confident with my willingness to pay (WTP), when I know the reference price.
	Price Bargain Monetary Benefits
PB1	I obtained better prices using the NYOP model than through the other Online Travel Agencies.
PB2	I obtained discounts that most consumers don't get.
PB3	I obtained better prices using the NYOP model instead of booking through an Online Travel Agency that also offered extra freebies.
PB4	The confirmed price was according to the value of my willingness to pay

(WTP).

	Experience – Perceived Self-Efficacy
EXP1	I know where to find the information I need for the manipulation of the bidding prices prior to making a bid.
EXP2	I always check hotel prices through other distribution channels such as Online Travel Agencies to ensure I will get the best value.
EXP3	The quality and amount of information using the NYOP approach have a significant impact on my choice.
	Bid Behaviour
BB1	Using the NYOP model, the seller accepted the first bid.
BB2	Using the NYOP model, the seller did not accept the first bid and I had to repeat a bid at a higher rate.
BB3	Using the NYOP model, the first and second bids were not accepted and I booked through an Online Travel Agency.
BB4	Do you think the NYOP approach is a FAIR price approach?
BB5	Do you prefer to book using posted reference prices instead of the Name Your Own Price approach?
	Motivation
MO1	I prefer to search hotel deals before I chose which online distribution channel to use to make a booking.
MO2	It is likely that the NYOP approach I chose is better than the Online Travel Agencies method of booking I am currently familiar with.
MO3	I am likely to find the best prices, purchasing travel products or services online.
MO4	I am likely to purchase travel products online from the distribution channel with the best prices.
	Purchase Intention
INT1	I am always using an online distribution channel to purchase travel products or services.
INT2	In the future, I plan to purchase travel products or services using a NYOP approach website.
INT3	Using the NYOP approach, I am expecting high product quality for the money I spend.

Source: Author

4.7.3 Study Two – Revenue Management and Pricing Methods in Hotels

The second study is an industry-conducted study. The study was focused on hotel executives that hold a managerial position and managers with a direct influence on revenue management and pricing decisions. The survey was carried out from the beginning of June 2015 until the end of August 2015. The study was concentrated on the use of dynamic pricing, a part of the revenue management strategy in the hotels. The objectives of this study are: to examine the implementation of revenue management as a broad strategy and, more specifically, the concept of dynamic pricing, a price adjustment depending upon the level of demand and the consumer willingness to pay for provided services. Utilising the conceptual framework, the current study will focus on understanding the challenges faced by each of the stakeholder groups and the impact of dynamic pricing and alternative pricing techniques on a hotel's performance. Moreover, the study explores the use of social media as part of the revenue management strategy. The study debates how the implementation of dynamic pricing may impact the change in consumer behaviour and how the consumer's comfort level to book online, using social platforms is increased. Figure 4.6 illustrates the proposed conceptual framework for this study.

The survey consisted of 17 questions that were divided into three (3) sections: (1) demographic characteristics, (2) general information on the hotels, and (3) revenue management and pricing implementation questions (see Appendix B for questionnaire). The questionnaire was intended to motivate the participants to contribute and complete the questionnaire, in order for the researcher to obtain accurate and complete responses reducing the misinterpretation.

Figure 4-6 The Proposed Conceptual Framework – Hotels
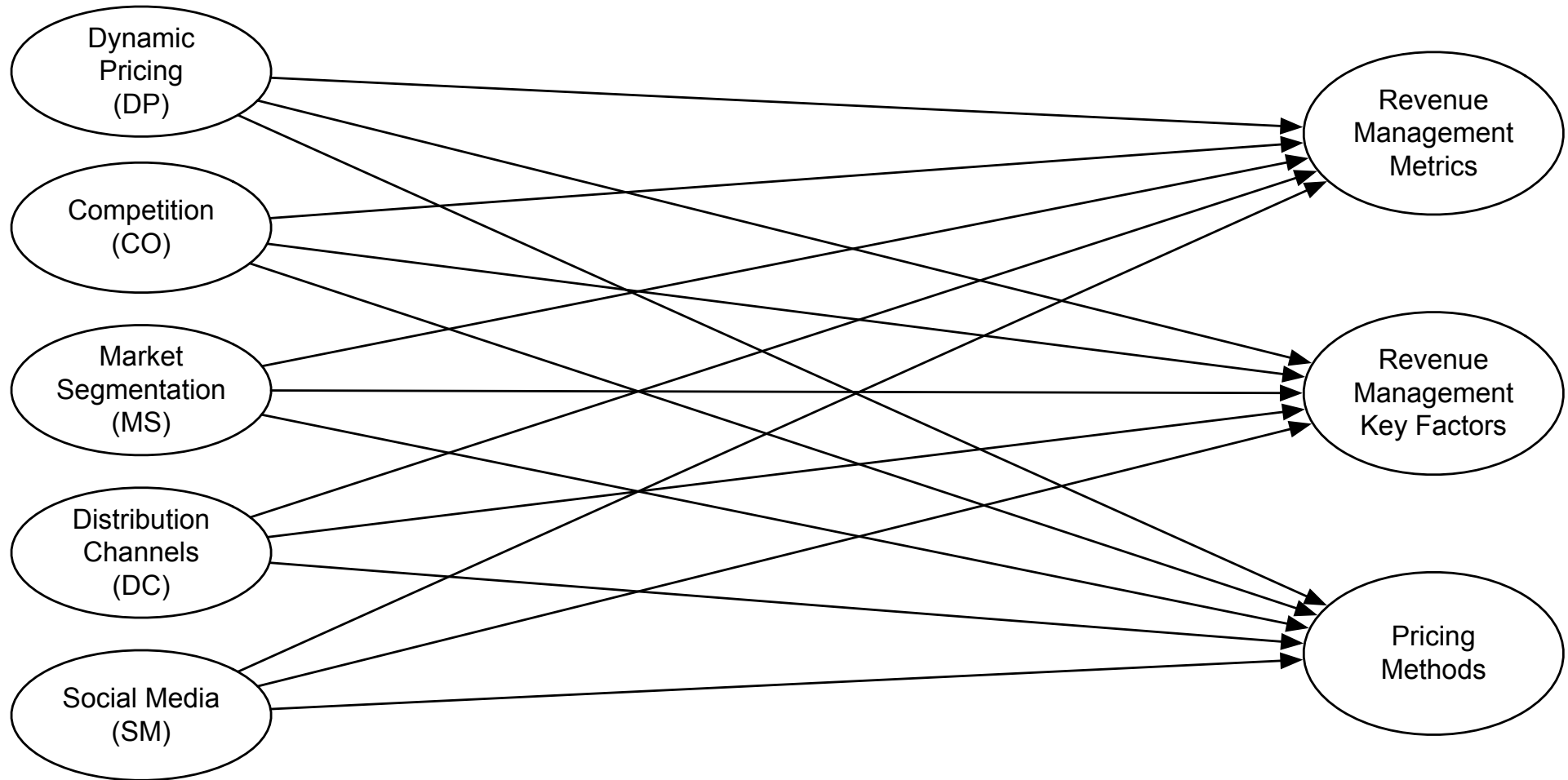
Source: Author

Similar to the previous study, the researcher has used a combination of answering styles. The study mainly includes a combination of a binary scale format (0 and 1), and a multi-category answer format of nominal, ordinal, and summated rating scales of Likert-type scales with 7 categories, ranging from 1 (strongly disagree) to 7 (strongly agree) or 1 (not at all important) to 7 (extremely important), to indicate the degree of agreement of the participants. The measurement model includes questions grouped by topic, in a logical sequence, namely revenue management key elements, revenue management performance metrics, pricing methods, market segmentation, distribution channels, competition, social media, dynamic pricing, and the name-your-own-price selling mechanism.

The first section of the survey obtained personal demographic information, used to control variables related to the respondents, namely the respondent's age, gender, type of education and the highest level of education obtained, and the region of domicile (questions 1-5).

The second section includes questions to classify the respondents' occupation and hotel participation. In addition, the researcher used a hotel's ranking, the Smith Travel Research (STR) hotels scale segments (Global), as a method to group the hotels equally. The STR offers a method by which branded hotels are grouped based on the actual average room rates. Independent hotels, regardless of their average room rates, are included as a separate chain (Global, 2014). The Chain Scale Segments ranges are (a) Luxury Chains (5 stars / Deluxe), (b) Upper Upscale Chains (4 stars, Full Service (F&B)), (c) Upscale Chains (4 stars), (d) Upper Midscale Chains (3 stars, Full Service (F&B)), (e) Midscale Chains (3 stars), (f) Economy Chains (1-2 stars), and (g)

Independents. The purpose of using the STR scale segments is due to the broad spread of the survey and executives in different countries. Using the STR is expected to result in covering the issue of the categorization of hotels according to the country's judicial environment.

The third part of the survey includes questions regarding the critical role and practice of revenue management and pricing approaches within the hotels. The section first consists of questions that fall under an ordinal scale of measure. Question nine (Q.9) asks the respondents to answer on *'who is responsible for the day-to-day revenue management strategies at your hotel.'* This first question helps the researcher to set in place the grounds of the study. In addition, this question identifies whether revenue management is practiced on-site.

Then, the researcher began to investigate the importance of revenue management and pricing. In this section, the respondents were asked to answer questions to measure the construct categories: revenue management key elements, revenue management incentive metrics, pricing methods, market segmentation, distribution channels, competition, social media, and the NYOP selling mechanism. A 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree), was used to measure the participants' responses.

The first variable, revenue management key elements, indicates the importance of essential revenue management key functions, established by the research conceptual framework, namely forecasting demand, price demand, inventory management, market segmentation, market positioning, and distribution channel management. The question was measured using a 7-point Likert-type scale, ranging from 1 (*not at all important*) to 7 (*extremely important*). The primary objective of this type of questions is to provide a ranking and to

determine how important the tactical demand management process is for the respondents. Moreover, it gives the researcher the basic information of the respondent's perception of the revenue management key functions. According to Phillips (2005), the job of tactical revenue management is to calculate and update the reservation systems, using the resource, price, and products capacity.

Next, the researcher examines the revenue management incentive metrics connected to the main stakeholders within the hotel, such as hotel managers, revenue managers, and sales managers. To connect the hotel's performance to the main stakeholders, running the hotel, is of high importance. This challenge provides a measure of the hotel's performance. In addition, it provides a motivation, an incentive to understand what drives results and profit and how this impacts their performance. In alignment to the previous questions, the construct pricing methods were measured by requesting the respondents to assess the important role of key pricing approaches, namely *'cost-based pricing,' 'inventory-based pricing,' 'customer-centric pricing,' 'competitors-based pricing,'* and the *'bid price'.* The respondents were asked which of these pricing approaches were affecting their pricing strategy. However, as revenue management impacts profits, it should be noted at this point that Internet intermediaries follow different pricing practices, depending on their purchasing style. Pricing includes costs, willingness to pay, and market competition. The established Internet intermediary types are the merchant model, the retail model, the opaque/auction model, referral sites, and consumer-generated media (CGM) sites. They accomplish their pricing strategy following a net-rate with a mark-up strategy; a gross (BAR) rate with a commission strategy; and a

threshold bidding strategy. Therefore, the net revenue is dependent on the financial agreement between the Internet intermediaries and the property managers. Moreover, the purpose of these questions is to examine the hotel's position itself as a competitive advantage, qualified to withstand the threats of new competitors or existing competitors to the market (the threat of a new entrance, threat of direct competitors). This part acts as a first step for the researcher to investigate the different pricing methods and connect them to the dynamic pricing concept, based on willingness to pay (WTP), and the name-your-own-price (NYOP) selling mechanism, implemented as part of revenue management procedures within the hotel.

The next variable measures how hotels determine segmentation strategies in an attempt to improve consumer purchasing, in order to drive profitability. The researcher requested the respondents to verify how their hotels differentiate prices, based on consumer willingness to pay (WTP). Do the hotels understand the idea of consumer segmentation to assign different prices to different products, across all channels and all consumer segments? These items served as means to gather more detailed information regarding consumer segmentation versus product segmentation strategies. However, the scope is to find a balance in using pricing strategies that will stagger the competition in a price-sensitive market. To apply dynamic pricing, the hotels should divide consumers into different segments and offer them the same products, only differently priced. A room price increase or decrease should represent a value that the consumer perceives as fair. Dynamic pricing is widely used in hospitality and hotels do not necessarily price with a rational structure. The capability to segment the market depends on how differently the revenue

managers price the two groups of consumers and how well they identify the groups and their willingness to pay. These items were assessed with the following statements: 'we promote the hotel differently to various groups of consumers,' and 'we divide consumers into groups based on similar or same buying characteristics'. Hotel companies should pay attention to price cannibalization, otherwise the consumer will not perceive prices as being fair. Consumers evaluate the fairness of a price relative to what other consumers are paying and to profit earned by the supplier (Phillips, 2005). Consumers like special offers. Dynamic pricing can stimulate the issue of perceived fairness, which applies to consumer behaviour. Moreover, hotels segment travelling consumers based on the country of arrival, on transient consumers travelling for leisure, or on consumers travelling as a group. The responses were measured with two items: 'We categorize consumers according to whether they are traveling for business, or leisure, or as group,' and 'we categorize consumers and offer different prices based on their locations'.

The researcher's goal was to measure the important role that distribution channels management is playing in association with the impact of the pricing strategy and connected to the research framework, which discusses the expanded revenue management levels (Figure 4-1). One of the main tactical functions of revenue management is the distribution channel strategy – management, translated to mastering the reservation channels, mainly the use of social media and online travel agencies (OTAs). The research is based on the approaches of how operational revenue management, such as consumer willingness to pay (WTP), driven by the NYOP model and dynamic pricing, functions within the online distribution environment. This part is twofold, as the

replies vary between the hotel revenue managers and the OTAs managers. Nowadays, two groups of companies, Priceline.com and Expedia.com, each with their subsidiaries, dominate the global online market place. Currently, the big debate is: *'is the OTAs a friend or a foe'* related to the advantages or disadvantages working with online travel agencies. It is well established that online travel agencies are inventory and commission orientated, up to 45% of the BAR rate in order to promote a hotel thus, meaning less revenue for the property as the commission level is calculated out of the RevPAR (AHLA and STR Special Report, 2012). Therefore, the next questions requested the respondents to provide his/her judgment on the importance of the distribution channels. 'How important are the distribution channels to your hotel / chain?' The respondents also had to indicate the importance of cooperating with online travel agencies (OTAs) or another type of online distribution, such as flash sales buying sites or the NYOP selling mechanism. The above questions serve as a primary tool for a better understanding of the hotel inventory distribution as an integrated focus of the hotels' revenue management strategies. The hotel inventory is perishable, meaning that it should be distributed otherwise. An undistributed room creates an opportunity cost resulting in lost revenue. The researcher is currently in place to recognize the level of implementation and evolvement, as well as the advantages of the distribution channels within hotels. Because of the changes in the online environment over the past years, the number of available distribution channels has increased. In fact, the researcher could determine the degree of expansion of the distribution channels according to the response rates. However, at this point we need to be cautious. An expanded use of distribution channels does not automatically mean an increase in hotel revenue. The online distribution channels are offering hotels more

opportunities. However, depending on the distribution channel, a certain cost and a level of control is associated with it. Therefore, an appropriate pricing strategy is a key function that the person responsible for the revenue management strategy should take into consideration. It is different for each distribution channel. At the same time, now that the researcher has established the backbone grounds for the study, another factor is becoming equally important and should be paid attention to - the competition.

Next, the researcher examines the important role competition plays within the company's pricing strategy. The evolution of the Internet has altered the way consumer's book hotel rooms and hotels are finding themselves in an unstructured situation with the hotel intermediaries. To facilitate the development, hotel intermediaries have introduced rate parity strategies, meaning that they sustain consistent room rates for the same product on each distribution channel, irrespective of the commission level paid out to OTAs. However, rate parity does not promote competition. Therefore, European anti-trust legislators have requested the OTAs to amend the agreement clauses on the contracts held with the hotels, to allow competition among hotels and distribution channels (hotelnewsnow.com - Baker, 2015). Price is key to selling the hotel product. Hence, the respondents were asked to identify 'how important it is to understand competitors' pricing strategies'. Moreover, they were asked what their initial competed pricing strategy was. Do they sell at 'higher,' 'lower,' or the 'same' rates? In fact, the above questions are employed as a tool for partial understanding of the Porter's five forces framework, which influence profitability and is relevant to the collaborative environment. As price is an important motivator for booking a hotel room, revenue managers are in a

situation, where their perception has to change and they should concentrate on understanding their market segment, providing product differentiation. Competition is a major factor influencing pricing in any market. Thus, the researcher asked the respondents to identify the importance of dynamic pricing for the agencies' market share, which can be obtained by an alternative as:

Market share of alternative

$$i = Fraction\ of\ buyers\ for\ whom\ wi{-}pi > wj - pj\ for\ all\ j \qquad (6.7.2.1)$$

(Phillips, 2005)

The construct, dynamic pricing, was measured by responses based on the current market conditions as part of the overall revenue management strategy. Although the Internet has considerably reinforced the way prices are now available, the 'flat rate mark-up only' pricing approach is still one of the most popular and continues to be applicable in numerous intermediaries. The reason behind this is that the approach relies on the simplicity to determine the final price. Companies do not use any one pricing approach one hundred (100) % and adjust their pricing approaches according to how they best achieve different goals (Phillips, 2005). Therefore, the researcher requested the respondents to determine the usage and impact of dynamic pricing within their hotels. Although Marriott Hotels introduced the dynamic pricing approach in hotel chains during the early 2000s, this pricing approach works and is applicable in a wide range of hotels, mainly resort properties working with tour operators. The properties are forced to sign a flat contracted rates agreement and they have to block inventory for a specific period of time, during which only the travel intermediary can use the inventory. Airlines were the pioneers and recognised the customer's sensitivity to prices early and have therefore started charging

different prices for different consumers, built on the market segmentation theory. In fact, they charged customers based on their willingness to pay (WTP) and considered each consumer with their individual independent demands. As Robert Crandall, a former CEO of American Airlines, once said: *"If I have 2,000 customers on a given route and 400 different prices, I'm obviously short 1,600"* (Poundstone, 2010:182). The development of the Internet has increased the buyer's power and improved their shopping experience. On the other side, increased competition between the suppliers, offering the same products, also increased the associated costs, when selling products through a third party instead of selling them directly to the consumer online. In addition, the researcher examined the application of dynamic pricing related to hotel performance indicators. Therefore, they examined how different performance indicators, such as the RevPAR (revenue per available room) are affected by the utilization of a variable pricing policy. Moreover, if long-term profitability is the hotel's objective, then dynamic pricing affects the goal. According to Nagle (2002), the 'goal of pricing is to find an arrangement of margin and market share' aimed to maximize profitability.

Yeoman and McMahon-Beattie (2004) indicated two performance metrics to calculate the change in revenue, due to dynamic pricing:

Revenue change due to sales = (Dynamic sales – Fixed sales) ×

Dynamic price (6.7.2.2)

Revenue change due to price = Fixed sales × (Dynamic price –

Fixed price) (6.7.2.3)

This means that the sales volume (market share) is higher resulting in a dynamic pricing approach rather than fixed pricing. In addition, the researcher touched on the special offers pricing approach, which is a temporary reduction in price. However, it is a constraint that creates potential incremental costs. The researcher examined how promotional policies are affecting the hotels' dynamic pricing policies. Special offers resulted in a reduction in hotel revenue contribution. The question to be asked here is how much the room occupancy must increase, to profit from a price decrease. The use of the equivalent room occupancy formula can show managers what occupancy percentage is needed when discounts are being considered (Jagels and Ralston, 2007):

$$
\text{Equivalent Room Occupancy} = (\text{Current Occupancy Percentage}) \times \\
((\text{Rack Rate} - \text{Marginal Cost}) / (\text{Rack Rate} \times ((1 - \text{Discount} \\
\text{Percentage})) - \text{Marginal Cost}) \qquad (6.7.2.4)
$$

The overall goal is to surge the return on investment (ROI) that the target market will provide. Once decisions have been made in regards to the pricing strategy that will be used, the main focus will have to be to increase sales and market share by capturing sales from several market segments. This means that the sales volume (market share) is higher, resulting in a dynamic pricing approach rather than fixed pricing.

For the next measurement construct of the survey, the respondents were asked about the anticipated use of social media as part of their hotel pricing strategy. Historically, revenue management is based on effective inventory distribution and a strong rate base. However, nowadays, these fundamentals have been

changed. In the age of social media, hotel revenue performance is driven by the market value. That said, for many hotels, the use of social media, as part of the revenue management pricing strategy, still remains unchanged. Therefore, the following questions help envisioning how social media is impacting the hotels' ability to optimize demand, and, moreover, how it is having an impact on revenue management strategies following the rapid changes in consumer purchasing behaviour. Social media created a landscape to increase the property exposure and profitability. The researcher examined the correlation between the increasingly vital role of social media and the adaption to the properties long term and tactical pricing strategies. Therefore, the respondents were asked about their perceived implementation of social media as part of their pricing strategy. The potential of driving a consumer's booking behaviour to measure the impact on property performance indicators. If a hotel increases its consumer review scores by 1 point on a 5-point scale, the hotel can increase its prices by 11.2 (%) per cent and still maintain similar occupancy and market share (Anderson, 2012).

The researcher is using questions to measure the overall impact social media has on every performance indicator, namely occupancy %, ADR, and RevPAR. As the Internet is about transparency, the respondents were asked about the impact social networks have on the hotel's profitability, based on their online reputation. Nowadays, hotels monitor their online reputation through social networks, which, in essence, means that they are starting to benchmark consumer experiences against the competition and their effect on profitability. Social media is about capturing the attention of the consumer, due to the immediate nature of sharing real time information. This is translated to the potential of driving consumer's booking behaviour to measure the impact on

agency performance. According to the respondents' replies, hotel revenue managers could use this source of information to analyse social trends and to make decisions based there on. Therefore, hotels are forecasting that we will see a proliferation of data analysis received from social media, related to consumer behaviour to optimize demand.

The last variable examined is the practical application of the NYOP model approach within a hotel. The respondents were requested to evaluate the implementation of the 'buyer-driven conditional purchase offer' mechanism (NYOP model) approach to distribute the travel products to the consumer. The NYOP mechanism is attractive because it forms limited pricing risks and damage of brand awareness. The hotel can offer discount rates through an OTA without the distress that other consumers and competitors will know any of these rates. This part first requested the respondents to indicate whether they cooperate with any opaque provider utilizing the NYOP mechanism of sales. If the respondents' answer was negative, they were asked to avoid the specific section and to continue at the last part of the survey. The questions measured the hotels' satisfaction based on the implementation of the NYOP model, adapted from Priceline.com or other providers. In practice, a high level of satisfaction translated to a positive impact on profitability. The question to be measured was: 'how critical is the impact of using the NYOP model on your profitability?' The respondents' answers indicate a result of profit maximization, as well as a definite increase in market share. In addition to the above set of questions, the respondents were requested to present the mode that their hotel adopted in practicing strategic pricing, based on their experience. A clear objective of dynamic pricing is to provide consumers with an incentive to

materialize reservations during a variety of periods and not only during peak periods. Hence, one offers attractive prices. A sale through the NYOP model is associated with high distribution costs and additionally assesses the threshold price to be given by the distribution with changing prices. Therefore, the researcher measured the influence of the NYOP model on the implementation of the hotels' long term or short-term tactical pricing strategies. Finally, they determined the influence that the model has on hotel strategies against the competition, as the hotel rates are entirely market driven.

Table 4-5 Constructs and Items for Pricing Approaches in Hotels

Item code	Constructs and Measurement Items
	Please indicate the importance of the following essential key functions of revenue management.
Revenue Management Key Elements	
RM001	Forecasting Demand
RM002	Price Management
RM003	Capacity Management
RM004	Market Segmentation
RM005	Market Positioning
RM006	Distribution Channel Management
Revenue Management Metrics	
RM007	Is the revenue manager's performance directly measured through RM metrics (ADR, RevPAR etc.)?
RM008	Is the hotel manager performance connected to RM metrics (ADR, RevPAR etc.)?
RM009	Is the sales manager performance connected to RM metrics (ADR, RevPAR etc.)?
PR – Pricing Methods	
PR001	PR - Cost-based pricing
PR002	PR - Inventory-based pricing
PR003	PR - Customer-centric pricing
PR004	PR - Competitors-based pricing
PR005	PR - Bid price

MS - Market Segmentation

MS001	We promote the hotel differently to various groups of consumers.
MS002	We divide consumers into groups based on similar or same buying characteristics.
MS003	We group consumers and focus on understanding their needs.
MS004	We understand the consumer target markets of our competitors.
MS005	We invest in innovation to identify new consumer segments.
MS006	We categorize consumers according to whether they are traveling for business, or leisure, or as a group.
MS007	We categorize consumers and offer different prices based on their locations.

DC - Distribution Channels

DC001	How important are the distribution channels to your hotel / chain?
DC002	How important is it that your hotel is represented on every distribution channel?
DC003	How important are online travel agencies (OTAs) as efficient distribution tool?
DC004	How important are buying sites or flash sales to your hotel / chain?
DC005	How important is your branded website as a distribution tool?
DC006	How important is it for you to promote through opaque distribution channels, such as Priceline.com?
DC007	How important is it for you to keep your rates similar on all of your distribution channels?
DC008	How important is the commission level to use a distribution channel?
DC009	How important is it for you to know, when which distribution channels are performing?

CO - Competition

CO001	How important is it for you to understand your competitor's pricing strategies?
CO002	On average, how important is it for you to set your prices similar to your competitors?
CO003	On average, how important is it for you to base your prices lower than your competitors?
CO004	On average, how important is it for you to base your prices higher than your competitors?
CO005	How important is it to understand your competitors' promotional tactics?

CO006	How important is it to understand your competitors' products?
CO007	How much of an essential element is it to determine an effective comp set?
CO008	To what extent does the quality of comp sets affect your pricing decisions?

SM - Social Media

SM001	How important is the use of social media as part of your revenue management and pricing strategy to you?
SM002	How important is it to promote your hotel through mobile application as a distribution channel?
SM003	How important is the impact of social media on your property performance indicators?
SM004	How important is the impact of your online reputation (reviews) on your profitability?
SM005	How important is the use of social media to your hotel's tactical pricing?
SM006	How important is the use of social media within the RM strategy to improve the hotel's market share?

DP - Dynamic Pricing

DP001	Is the implementation and use of dynamic pricing essential to your hotel?
DP002	Do promotional policies (special offers) affect the hotel's prices?
DP003	Is dynamic pricing a fair sales distribution approach?
DP004	Does dynamic pricing have a positive influence on the hotel sales volume?
DP005	Does dynamic pricing create an increase on demand and RevPAR?
DP006	Does the use of dynamic pricing increase consumers' comfort to book a room in your hotel?
DP007	Is the consumer's satisfaction important when setting room rates?
DP008	Does the hotel understand the consumer value for money strategies when setting room rates?
DP009	Has the use of dynamic pricing increased the hotel's market share?
DP010	Are the competitors' pricing strategies important to you when deciding on room rates?

NY – NYOP (Name-Your-Own-Price) Model

	Please answer the following questions **only** if your hotel uses any **Opaque Distribution Channels.**
NY001	How important is it for you to promote through opaque distribution channels, such as Priceline.com?
NY002	How critical is the impact of the name-your-own-price (NYOP) channel on your tactical pricing strategy?
NY003	How critical is the impact of the name-your-own-price (NYOP) channel on your long term pricing strategy?
NY004	How critical is the impact of using the NYOP model on your profitability?
NY005	How important is it for you to sell the excess capacity through an opaque intermediary, using the NYOP model?
NY006	How important is it for you to increase the market share of the NYOP model at your hotel?

Source: Author

4.8   Sampling

The goal of conducting this research is to determine and describe different situations on a basis of findings. The logical approach to describe the characteristics of the study is to use a population and study their behaviour. Veal (2011:356) defines population as 'communities of people or non-human phenomena, which is the focus of attention in a research project'. Furthermore, Kent (2007:227) argues that 'population needs to be defined very carefully, and should always be located in time and space.' Therefore, it is difficult to collect all data using an entire population with similar characteristics. Hence, instead of studying an entire population, you will choose a sample (smaller group) of the population. Saunders *et al.* (2012) seconds the above, arguing that you should not expect that collecting data from the entire population would essentially provide more useful results than collecting data from a sample with similar

characteristics. Using the results obtained from the observed representative sample enables you to make generalisations about the entire population (Leedy and Ormrod, 2001). According to Bryman (2011:176), a sample is 'a subset of the population that is selected for investigation.' Ryan (1995:163) defines the sample 'as a representative group drawn from a given population.' Bryman (2011:175) argues that the 'need to sample constitutes an invariably encountered in quantitative research.' Additionally, the selected population should reflect the purposes of the research being addressed. Saunders *et al.* (2012:212) also mentioned that many researchers, for example 'Henry (1990), argue that using sampling makes possible a higher overall accuracy than an entire population' because the researcher can collect information that is more detailed and has time to design and pilot the instrument of collecting the data. Ryan (1995:163) argues that use a population should be a match with the characteristics of the sample. According to De Vaus (2002:70), when you acquire information by only a number of selected members of the population, you establish a sample. Choosing a sample depends on how you can introduce and develop a sampling frame. This study aims to establish a demographic profile of consumers using the NYOP model, out of the entire relevant population of consumers booking hotel accommodations as a target group of interest.

4.8.1   Types of Samples

According to Churchill (1995:479), there are two categories of sampling techniques: (a) probability, also called random or representative sampling, where each member of the population has a chance, although not an equal one, of being included in the sample, (b) non-probability or judgemental

sampling, involving personal judgement in the selection process. Thus, there is no one way of which part of the population will be included in the sample and no accepted norm of procedure for the selection. The selection is subjective and therefore, there is no guarantee that the sample will be representative of the population. Some members of the population will be excluded, meaning that not every member of the population has an equal chance of being selected.

There are several types of non-probability samples. Bryman (2011:190) refers to three main types. Saunders (2009:235), however, adds another type to the by researchers commonly used, list of non-probability types, adding up to: (a) the convenience or accidental, haphazard sampling, (b) the quota sampling, (c) the judgemental or purposive sampling, and (d) the snowball sampling.

- According to Churchill (1995), *convenience sampling* refers to subjects (elements) that just happen to be where the information for the study is being collected, at the time the study is being conducted. It is mainly used in exploratory research, without suffering cost or time to collect data, since the selected subjects are easy to obtain for the sample.

- *Quota sampling* is a sampling type where the sample will represent the population because they possess the same set of characteristics (Saunders, 2009; Churchill, 1995). Quota sampling is used for large populations. A sampling frame is not required. Thus, it is possible to use this type of sampling, when no other is available (Saunders, 2009).

- *Judgemental sampling* is a sampling type where the researcher selects the sample based on his/her judgement. The researcher is confident that the selected group is the one qualified to best answer the study questions.

- *Snowball sampling* or chain referral sampling is a non-probability method, which relies on the researcher's ability to identify elements that meet the criteria or have the characteristics that are of research interest. The sample elements then recommend others with the same desired characteristics that also meet the criteria. Bryman (2011:193) argues that a snowball sampling is a nonsensical, random sample because the extent of the population is unknown.

4.8.2   Selecting Sampling Method

This research compiles two cross-sectional surveys. The surveys were exposed to the population from different groups of people. For that reason, a non-probability technique was chosen. A snowball sampling method was used, due to the following main reasons:

a. There was no possibility of knowing the exact population of consumers using the NYOP model. According to Biernacki and Waldorf (1981:144), the main problem in research that uses snowball sampling, is the social visibility of the target population. Despite this statement, Travelclick.com published a report associated with the users of the NYOP model (Travelclick, 2012). In short, the report states that the opaque segment represents 6% of the hotel reservations for major hotel brands in North America. However, this report is no longer accurate because of the shifting population, the improvement of the model, and other decision-making network issues. There is a daily, disproportionate number of new consumers or consumers who no longer use the model.

b. In this study, connectivity between colleagues, companies, and other stakeholders is a core component. Therefore, the researcher is focused

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on tracing connections between consumers that used the NYOP, to evaluate the satisfaction and confidence between sample members using the said model. Moreover, the researcher examined the relationships and implications of the revenue management approach between revenue managers within the hospitality industry, in order to obtain attitude or opinion data.

c. In the study of RM and pricing methods in hotels, the researcher focused on collected data through executives, holding a managerial position with a direct influence on revenue management and pricing decisions. It was difficult for the researcher to access and establish affiliations with the specific sampling frame in order to recruit their participation. Therefore, the collected data is associated with a degree of difficulty and it is acknowledged that some areas would be expected to generate too few responses relative to the effort required to establish relationships to the sampling frame. Biernacki and Waldorf (1981:148) state that 'when the researcher moves into areas with few contacts, new problems arise, as the sources used to initiate referral chains become problematic'. Thus, the sampling effort should be directed to different groups of people.

d. This study is based on samples that logically have their own limitations. Therefore, the collected data verification of eligibility, as well the information provided by the respondents, become important. After using the referral sampling method once, the initial connections were exhausted and the researcher moved the survey to different contacts. According to Handcock and Gile (2011), this sampling technique is a respondent driven sampling. Therefore, it allows the researcher to

request the participants to identify other participants, utilizing 'mutual relationships' or 'social networks' in the population.

e. The snowball sampling method does not require a sampling frame. Therefore, it can be implemented without extensive formal research required by time, location, and cost constraints (Heckathorn and Magnani, 2004).

4.8.3　Sample Size

It is important to precisely select your sample. Obviously, the data collected through the distributed survey questionnaires provides an indication of a base for your statistical research analysis. Furthermore, during the data analysis, the study generalisation results about the population should be accurate. There are difficulties when deciding upon the sample size. Basically, the researcher discusses that the larger your sample, the lower the proportion of marginal error. According to Saunders (2009:218), the choice of sample size should be such, that the 'characteristics of the data collected would represent the characteristics of the total population'. As one of the important factors, De Vaus (2002:81) highlights the 'degree of range in the population on key variables, due to the level of sampling error and the reliability required'. However, Ryan (1995:177) argues that the composition of the sample is more important, as size itself is not a guarantee of a certain degree of representativeness. De Vaus (2002:83) seconds Ryan (1995) and mentions that the most important key determinant of sample size is the need that the subgroup sample size is large enough to provide you with sufficient results for the analyses. Therefore, De Vaus (2002) concludes that the 'final sample size will be a compromise between

cost, accuracy, and ensuring sufficient members for meaningful subgroup analysis'.

For this study, the researcher employed two online surveys. The research questions were posted online and the questionnaires were made available to potential respondents via LimeSurvey a web-based software.

The first survey was conducted directly through the end consumer (NYOP). On the 635 questionnaires, 456 completed questionnaires were collected. This represents a response rate of 71,81% of the responses. The researcher has conducted an online survey using a consumer research panel. Therefore, he has employed Limesurvey and MTurk, marketplaces for online work, to further collect data. The use of an online consumer survey panel was appropriate because the purpose of the study was to identify consumer behaviour and understand the final consumer while using the name-your-own-price mechanism for booking online hotels or purchasing other services (Park and Gretzel, 2010).

The second survey, conducted in hotels, was in an email invitation to 140 hotels. The researcher recruited participants from the hospitality and tourism industry based on their positions. Only participants holding executive positions, or positions with direct influence on decisions pertaining to the revenue management and pricing strategy, were solicited. Their participation, however, was voluntary. The researcher contacted his Linkedin contacts and other members of the industry known by the researcher. Furthermore, the researchers' contacts also e-mailed potential respondents. The email invitations explained the survey purpose to on-site revenue managers or executives with an influence on decisions or on the pricing strategy and requested that they

participate in the online survey through a web link. From the 140 questionnaires, 105 surveys were returned, for a response rate of 75.00%.

To help the questionnaire flow, the researcher notified all participants of the survey instructions in advance.

4.9   Validity and Reliability

The design of the research is very important. We have already discussed that the decisions regarding composition and size of the sample should be taken with considered attention. Moreover, during the data collection, an error can indicate the need to reassess the whole procedure and to undertake the collection process once again; otherwise it may lead to false results in the data analysis. Regarding the matter of avoiding the possibility of inappropriate wrong answers, the issues of validity and reliability should be treated with great consideration. According to Saunders (2009:157), validity 'is concerned with weather the findings are really about what they appear to be about,' meaning that the research hypothesis measures what it is supposed to measure (Ryan, 1995). On the other hand, reliability indicates 'the extent to which the data collection techniques or analysis procedures will yield consistent findings' (Saunders, 2009:156), meaning that reliability refers to the 'consistency of the results obtained' (Ryan, 1995). Churchill (1995:402) defines validity as 'the extent to which differences in scores on it reflect true differences among individuals on the characteristic we seek to measure, rather than constant or random errors'. Furthermore, Churchill (1995) continues and categorizes validity into three types of measurements (1) pragmatic validity, (2) content validity, and (3) construct validity. Thus, Churchill (1995) argues that the measurement of construct is a vital task because it assesses 'how well the instrument measures

what it was intended to measure'. According to O'Leary-Kelly (1998), 'construct validity involves the assessment of the degree to which a measure correctly measures its targeted variable'. The researcher should accurately and reliably measure the attitude on the subject using the necessary steps to establish the validity. Churchill (1995) refers to the distinction between systematic error and random error as critical because of the validity. O'Leary-Kelly (1998) state that 'the larger the systematic error, the less valid the measure and similarly, as random error is related to reliability of a measure can lead to incorrect results'. Figure 4-6 illustrates the three steps of the construct validation procedure, which is a multifaceted process.

Figure 4-7 Construct Validation Process

Step 1	Step 2	Step 3
Content Validity Identification of theoretically based empirical indicators (items that are expected to measure the construct).	Construct Validity Empirical assessment of the extent to which empirical indicators measure the construct: • Unidimensionality • Reliability • Validity	Nomological Validity Determination of extent to which the construct relates to other constructs in a predictable manner.

Source: adapted from O'Leary-Kelly and Vokurka (1998)

As emphasized by Churchill (1979), in order to provide evidence of the survey instrument reliability over time, Malhotra (1998) argues that the most common method of validity testing is the construct validation.

The first step, referred to as content validity, consists of collecting items, which are thought to theoretically measure the construct (Churchill, 1979; Nunnally,

1978; O'Leary-Kelly and Vokurka, 1998; Malhotra and Grover, 1998). The second step indicates the 'degree to which the empirical indicators measure the construct' (O'Leary-Kelly and Vokurka, 1998). This step is associated to the validity and reliability of the indicators. Churchill, (1979) referred to the above as the degree of measurement error and the distinction. Finally, the third step, referred to as nomological validity, states how a construct relates to other constructs in a fundamental hypothesis-testing step.

4.9.1 Construct Validity

As emphasized by Churchill (1979), in order to provide evidence of the survey instrument reliability over time, Malhotra (1998) argues that the most common method of validity testing is construct validation. In this study, construct validity was evaluated by a commonly used combination of techniques. To examine the measurement scales the researcher used unidimensionality, reliability, and validity.

4.9.1.1 Unidimensionality

Unidimensionality is an essential prerequisite for reliability and validity analyses (Nunnally, 1978; Fornell and Larcker, 1981). The computation scores are meaningful if each of the measures is acceptably unidimensional (Anderson and Gerbing, 1988). A construct is unidimensional if the existence of one construct's trait underlying the data (Hattie, 1985). McDonald (1974:84) argued that 'a set of items is unidimensional if and only if the set fits a (generally non - linear) common factor model with just one common factor'. However, unidimensionality

alone is not sufficient to ensure the usefulness of a scale (Anderson and Gerbing, 1988).

4.9.1.2   Reliability

The reliability analysis uses Cronbach's alpha (α) coefficient as the most popular index to measure consistency. The coefficient alpha should be assessed after unidimensionality as the measurement reference of reliability. Cronbach alpha is a ratio of the true score variance to the observed score variance (Hattie, 1985). Therefore, the Cronbach's alpha values depend on the distribution of the true scores of the population (Nunnally, 1978). According to Nunnally (1978), the generally agreed lower level for Cronbach's alpha value is .70 to be considered reliable. However, as this research is exploratory, Hair *et al.* (1998:118) states that values with alpha level a > .60 are acceptable.

4.9.1.3   Convergent Validity

In this study, the composite reliabilities (CR) were used to assess the degree of consistency between multiple measurements of a variable (Hair et al., 1998). The CR were calculated using the measures suggested by Fornell and Larcker (1981), $CR\eta = \frac{(\Sigma\lambda\gamma\iota)2}{(\Sigma\lambda\gamma\iota)2+(\Sigma\varepsilon\iota)2}$ where CR = composite reliability for scale η; $\lambda\gamma\iota$ = standardized loading for scale item $\gamma\iota$, and $\varepsilon\iota$ = measurement error for scale item $\gamma\iota$ (Fornell and Larcker, 1981). The AVE values used to measure the convergent validity were calculated using the $V\eta = \frac{\Sigma\lambda\gamma\iota2}{\Sigma\lambda\gamma\iota2 +\Sigma\varepsilon\iota}$ where $V\eta$ = average variance extracted for scale η; $\lambda\gamma\iota$ = standardized loading for scale item

$\gamma\iota$, and $\varepsilon\iota$ = measurement error for scale item $\gamma\iota$ (Anderson and Gerbing, 1988; Fornell and Larcker, 1981).

4.9.1.4   Discriminant Validity

Discriminant validity used to evaluate the measurement model when the average variance extracted (AVE) in each construct exceeds the square value of the coefficient in which the correlations are not constrained to unity. Hence, each construct's AVE must be compared with its squared correlations with other constructs (Anderson and Gerbing, 1988). The shared variances values used to measure the discriminant validity were calculated using $\gamma^2=1-\psi$ where γ^2 = shared variance between variables, and with the diagonal element of ψ indicating the amount of unexplained variance (Hult, Ketchen, and Slater 2005; Fornell and Larcker, 1981).

4.9.2   Scales of Measurement

The researcher conducted the studies to look at the application of revenue management within the hospitality industry, as well as consumer behaviour using the willingness-to-pay model to shop for travel products. Within each survey questionnaire, various scales have been used to measure the consumers' characteristics and to generate results. According to Saunders (2009:378), adapted from Corbetta (2003), rating scales 'are a coherent set of questions or items that is regarded as indicators of a construct or concept'. The scale of measurement falls into four categories: (a) nominal, (b) ordinal, (c) interval, and (d) ratio (Leedy, 1985:28). Accordingly, the application possesses statistical procedures, so a characteristic can be evaluated.

A nominal scale, according to Churchill (1995:390), is a 'measurement in which numbers are allocated to objects or classes of objects solely for the purpose of identification'. With a nominal scale, we can only count, as the only scale of numbers is identity.

An ordinal scale (i.e. Likert scale) are 'variables whose categories can be rank ordered but the distances between the categories are not equal across the range' (Bryman and Bell, 2011). Leedy (1985:28) refers to ordinal scales, as a measurement level of categorizing various pieces of data. We can compare the pieces, meaning that 'this scale allows us to *rank-order* our data'.

An interval scale is a measurement to which Churchill (1995:392) refers as a 'meaningful sense of how far apart the objects are with respect to the attribute,' in fact, it allows the comparison of the relationship amongst and between adjacent points.

4.9.2.1   Scales Development

There are a number of ways through which attitudes can be measured, a wide range of standardized rating scales. To perform an extensive quality research survey that would provide valid and reliable results, a comprehensive elicitation of characteristics is needed to measure the attitudes. The researcher has the opportunity to select which rating scale could consent for each concept, rather than building their own scales. However, Malhotra (1998:408) adapted from Cote and Buckley (1988) argues that because of the 'poor quality of some of the standardized measures that have been used in consumer behaviour research, researchers should be cautious about evaluating or comparing alternative theories based solely upon empirical evidence unless the appropriateness 'validity' of some of the measures has been determined'. For this research, the

researcher used a combination of nominal, ordinal, and interval scales of measurement. Building on the earliest method work by Churchill (1979), related to the development of valid measures, this research considers the given recommendations.

As this is an empirical study, which examines the associations between applicable variables, the researcher at the beginning benefited from the existing scales. Furthermore, he adapted a mixture of standardized scales and empirically developed the measurement scales according to the research needs, using accepted best practices (Churchill, 1979; Malhotra and Grover, 1998; O'Leary-Kelly and Vokurka, 1998). Research questions need to meet a number of requirements that can be informed by the existing research or theory, with the potential to make a contribution, given the resources available to the researcher (Bryman, 2011).

As such, the survey questionnaire was developed with the intention to meet and accommodate the researcher market experience for the purpose of the present study. Bryman and Bell (2011) state that the questionnaire structure needs to meet a number of requirements given the resources available. Thus, the researcher followed this approach and adopted Kim's and Eves (2012) scale development process, which began with a definition of the constructs and identification of the items based on the research questions and the hypotheses of this study followed by a series of steps to refine the questionnaire as well as the guidelines recommended for better response outcomes. Following the stages, the scale development procedure generated a number of constructs and questions that can be utilized in understanding the instrument as a measurement tool.

4.10   Data Analysis

In this research, the collected data analyses have been incorporated, using the statistical analysis software IBM SPSS 22 (Statistical Package for the Social Sciences) and AMOS 23. Because the data is collected from a sample of the population and is subject to sampling errors, before we enter the data to the mentioned matrix, it must be prepared. For that purpose, the collected quantitative data was organised in a mode, as the data had no meaning in its raw format. As Kent (2007:286) argues 'data preparation can substantially enhance the quality of data analysis'. The first step of data preparation involves checking the questionnaires to determine whether all answers are useable for analysis. Then, further processing ensures that the data is accurate and consistent. Furthermore, each question is coded into a machine-readable form. Coding means 'assigning a number to each possible answer to each question, usually beginning with 1 (Kent, 2007). Finally, the data is prepared to be entered into the data matrix.

According to Gang Li (2012), statistically testing techniques is 'one of the key tasks' and is commonly used in quantitative tourism research, mainly used in examining consumer behaviour (Dwyer et al., 2012). Moreover, Bryman (2011:353) discusses that, when working on data collected from a sample, there is no way to be sure whether the data represents the population. Therefore, a test of statistical significance comes in, which allows the researcher to judge how confident the results will be, based on the sample, representative of the population from which the sample was selected (Bryman and Bell, 2011). To test the degree of confidence related to the findings, a common feature is used; the concept of the *null hypothesis*. To accept or reject the null hypothesis, a minimum acceptable probability needs to be established (Dwyer et al., 2012).

The significance level is expressed as a probability level. Additionally, Lind (2005:320) argues that there is no one level of significance applicable to all tests. Thus, in social research, the accepted statistical significance level, selected for consumer research projects, is $p<0.05$, and lies between 0 and 1.0 (Lind, 2005:320; Bryman, 2011:353; Veal, 2011:461). According to Lind (2005:328), 'if the probability of p-value is smaller than the significance level, then the H_0 is rejected,' meaning that the finding exists in the population. The probability of accepting a true hypothesis is $(1 - α)$, where "α" is the level of significance. The probability level of 5 per cent ($p = 0.05$) means that there is a 5 percent chance out of 100 percent that the results are not true.

4.10.1   Statistical Analysis

For the statistical analysis of the survey-collected data, non-parametric tests were deemed to be the most appropriate. This, because the parametric tests require large sample sizes and stringent assumptions (Dwyer, 2012; Field, 2013:214). Therefore, if the 'sample size is too small (less than 20), or the level of scale of measurement is ordinal (ranked) scale or normal (categorical) scales,' then non-parametric tests should be used (Dwyer et al., 2012). Hence, the main reason for using non-parametric tests is that they 'require less stringent assumptions about the nature of the probability distribution of the populations,' while parametric tests are 'based on the assumption that the sample(s) have a normal distribution with equal variances' (Field, 2013:214; Gang Li, 2012; Dwyer, 2012:14). Moreover, Li (2012) adds that non-parametric tests 'allow the analysis of categorical and ranked data,' overcoming the shape of the distribution of scores by ranking the data (Field, 2013:214).

In the present study, in order to test the relationships between the variables, the univariate, bivariate, and multivariate analysis approaches were used.

The univariate analysis of variance (ANOVA) refers to the analysis of a single variable at a time (Bryman and Bell, 2011). In this research, a univariate analysis was done through means across several groups and through one-way frequency tables in order to analyse and present the personal and demographic characteristics of the sample. Furthermore, the mean values for each item were calculated and presented in tables. Finally, the frequencies of the personal data, such as gender, age, occupation, and educational level also derived from the univariate analysis. The results of the analysis are presented, through mean scores and percentages, in tables in the following chapters: five, six, and seven. In comparison to the analysis of a single measure, the bivariate analysis enables researchers to study the patterns of relationships between two variables at a time, with no necessary distinction between the independent variable (IV) and the dependent variable (DV). It simply shows the correlation between two variables (Tabachnick and Fidell, 2007:17; Field, 2013:267). In the current study, the researcher used the bivariate analysis with contingency tables that shows the frequency distribution of the values of the dependent variable, given the occurrence of the values of the independent variable to study the relationship between consumer satisfaction and profitability, dynamic pricing application and profitability, and to determine various probabilities or summarize any other possible connections between a series of two variables of interest (demographic and consumer behaviour characteristics) in each study.

Multivariate analysis refers to all statistical techniques that simultaneously analyse more than two variables in a single relationship or in a set of

relationships, with the goal of obtaining, measuring, and explaining the degree of dependence among varieties (Hair *et al.*, 1998:6). Among the most frequently used techniques of multivariate analysis are multiple regression, the multivariate analysis of variance (MANOVA), the factor analysis, and the cluster analysis.

The multiple regression analysis is a statistical technique, whose aim is to examine the relationships between the single dependent variable (criterion) and changes among several independent variables (predictors) (Hair *et al*., 1998:148). Its flexibility and adaptability allows a multiple regression analysis to be used with almost any dependence. Therefore, multiple regression analysis has the ability to draw generalizations about the relationships for an entire population (Lind et al., (2005:476).

The factor analysis is useful in developing and assessing theories by collecting scores from numerous variables (Tabachnick and Fidell, 2007:26). According to Hair *et al.* (1998:14), it is recognised as a tool that can be used to analyse the structure of the interrelationships among a large number of variables (e.g. survey responses) and to understand their underlying structures, known as factors. Field (2012:666) also reports that the factor analysis technique is used first, to understand the structure of a set of variables, second, measure the used variables, and third, to reduce a data set to a manageable size. According to Ryan (1995:258-259), factor analysis is similar to multiple regression, except that the variables are reduced to 'unobservable factors' and it requires a normal distribution of the variables. According to Vu and Turner (2012:204), the required sample size depends upon the size of the original sample. Moreover, Vu and Turner (2012) continue by saying that several authors recommend a

selected representative sample size of 5:1 (Gorsuch, 1983) or 10:1 (Nunnally, 1978; Everitt, 1975).

The cluster analysis is a multivariate technique that can be used for cases analysis based on the scores between several categories of measured variables (Fredline, 2012:212). According to Hair *et al.* (1998:15), it is a statistical technique to 'classify a sample of cases (responses to survey) into groups, called clusters, based on characteristics in common among the entities'. The cluster analysis is focused 'on the underlying structure of variables and the use of this structure in categorizing cases' (Hair *et al.*, 1998:15).

For this research, throughout the studies, a range of analysis and tests has been performed. The researcher believes that the following multivariate techniques represent the most appropriate methods: factor analysis (exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) by means), multiple regression, and the ANOVA, was performed using SPSS 22 and AMOS 23 to evaluate the scales and perform the statistical analysis.

4.11   Research Ethics Statement

This research is about how the implementations of revenue management practices and different pricing approaches have an impact on consumers' booking behaviour. The researcher has reached the respondents sample mainly through personal contacts with people working in the hospitality and tourism industry, using Linkedin or other electronic databases. Although their participation was optional, because the participants were holding on-site revenue manager or other managerial positions with a decision influence on

pricing strategies, the researcher ensured them that the collected data and analysis would be treated with integrity. Therefore, the questionnaire would be tested and evaluated to ensure validity and reliability. Moreover, the participants were assured that the information supplied would be strictly confidential.

4.12 Summary

This chapter is a review of the concepts and procedures used in this research. The validity and reliability of the results should be treated with great care. Thus, the research design, the survey questionnaire implementation, and the decisions on the nature of the sample are important assignments. The research framework employed in this study is based on 'real world' valid results and answers the study objectives stated in the first chapter.

The preceding chapters have examined the relative literature specific to revenue management research, in a setting that assesses how the specific characteristics within a company apply to the objectives and research questions. The study employs a quantitative method, which is considered appropriate for the research data collection, in order to emphasize the generated data. Based on the literature review, the researcher has designed a framework, which examines the effects of revenue management performance, built on a definite model. Following this framework, in this research, we study three topics on revenue management. For the quantitative research, the researcher is using two surveys to deeper examine the understanding of the different dynamic pricing models and the successful implementation applied in the hospitality and travel industry.

More specifically, the first survey was designed to examine the NYOP model based on consumers' perceptions and intentions of purchasing online travel

products through this specific pricing model and the practical implementation in the hotel industry. In this case, an extensive convenience sample of 635 participants was used. The questionnaire included 15 open-ended and closed-ended questions regarding the respondents' demographic characteristics; the consumers' behaviour; their satisfaction levels when using the Name-Your-Own-Price (NYOP) model; and the consumers' intention of buying travel products using social media. The survey was conducted between September and November 2014. The second study was an industry empirical study. The study was concentrated on the use of dynamic pricing as part of the revenue management strategy in the hotels. The survey employed 17 open-ended and closed-ended questions that were divided into the respondents' demographic characteristics; the implementation of revenue management within the hotels; the usage of dynamic pricing application within the hotels; the application of the dynamic pricing model of the Name-Your-Own-Price (NYOP) model, and, finally, the social media usage within the hotel revenue management (RM) department. The survey was conducted from January 2015 to June 2015.

In this research the collected data analyses have been incorporated using the statistical analysis software IBM SPSS. Because the data is collected from a sample of the population and is subject to sampling errors, it must first be prepared. The collected data, resulting from the survey questionnaires, should be processed and coded, using different scales of measurement, to convert them into usable information. For the analysis of the data, several types of analysis were employed. First, descriptive statistics, including frequencies and percentages, were used to describe the profile of the respondents. Second, the bivariate analysis was used to compare the means, and, finally, the multivariate

analysis was employed, in the forms of factor analysis, multiple regression, and the ANOVA, to discuss the research objectives.

In accordance with the conceptual framework, the literature, and the discussed methodology presented, the following chapters represent the analysis of the two interrelated surveys. In chapter five, the researcher focuses on the analysis of the theoretical framework and on the presentation of the initial study findings. Furthermore, he answers the connected objectives of the study. Next, the researcher is looking to discuss and analyse the results and the purpose of the second study. With the results from chapter seven, the researcher attempts to analyse the data related to different pricing models and the use of social media, applicable to the hospitality online environment.

5 PRICING MODELS – THE NAME YOUR OWN PRICE MODEL

"The customer is in charge in the new world disorder.
……… That's why revenue maximization must start with the customer point of view."

-Dieter Huckestein, President of the hotel division, Hilton Hotels Corporation

5.1 Introduction

The chapter aim is to present the results from the first study which was the acceptance and impact of reference prices on a consumer's use of the Name–Your–Own-Price model (NYOP). Following the literature review and methodology, this chapter provides the quantitative analysis of the study. Furthermore, the chapter examines the first three objectives concerning the exposure and acceptance of the NYOP model. The analysis is conducted to examine objective one on consumer's behavioural intentions on their willingness to pay (WTP) when using the NYOP method to book a hotel room, objective two regarding the extent of different perceptions, using the NYOP model, its influence on consumers' overall satisfaction and confidence when they purchase travel products. Including how price factors, reference prices, and the number of bids reflect on utilizing the NYOP model, and objective three concerning whether or not the availability of posted reference prices impacts a consumer's booking pattern when using the NYOP model (see Table 1-2 in the Introduction Chapter).

Therefore, to provide a better understanding of the Name-Your-Own-Price model (NYOP) Section 5.2, explains the design and the restrictions of the NYOP model, and how the mechanism works as a type of reverse auction

pricing model where the consumer places a bid for a specific service to satisfy the supplier's pre-set indicative minimum threshold price. Whilst, Section 5.3, describes the information concerning the demographics of the first study participants. The next Section 5.4, presents the descriptive statistics of the NYOP model survey. The chapter continues with the validation of the survey measurement model in section 5.5, followed by the analysis of reliability in section 5.5.1. Then the researcher presents the first analysis, exploratory factor analysis (EFA), in 5.5.2. Section 5.6, is an overview of the relationship between the variables correlation, whilst in 5.6.2, the researcher employed another analysis of the constructs, confirmatory factor analysis (CFA) to validate the initial measurement model. The chapter proceeds to an analysis of the study results, highlighting the employed techniques and further discussion in section 5.7. Finally, section 5.8 is a chapter summary presenting the chapter conclusion.

5.2   Name-Your-Own-Price (NYOP) Model

This study investigates the role of the Name-Your-Own-Price model, which is a form of an online auction mechanism. The online booking mechanism is built on 'buyer-driven conditional purchase offer' (Talluri and van Ryzin, 2004:244).

The Internet innovation has radically changed the travel industry. It created new sales channels, selling online travel product and services. Therefore, the travel industry faced an incredible development through online electronic intermediaries, known as OTAs. These intermediaries work as online travel agencies and have created new channels and pricing mechanisms. The main players that have emerged and work as discount agencies are Priceline.com and Hotwire.com. Both intermediaries offer online travel products and services with sustainable price discounts as oppose to the prices of other OTAs. Both agencies use a pricing mechanism defined as Name-Your-Own-Price Model and the process operates as a Consumer to Business model (C2B), in which the consumer declares their price according to his/her willingness to pay (WTP), instead of the connected to the mechanism supplier, which has to accept or reject the offer. A consumer using the NYOP model specifies a willingness to pay, the price, an itinerary or hotel location, and hotel category (the offers refers to generic characteristics and features, not to specific brands). The reference price and accommodation types are not provided hence, the opaque approach (priceline.com). However, the consumer provides a flexibility regarding the accommodation type, so they must accept substantial uncertainty over the details of their reservation until the transaction is completed (Shapiro and Shi, 2008; Talluri and van Ryzin, 2004:521), compared with the traditional model when both reference price and accommodation are available. If the seller

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accepts the consumer bid request then the consumer is committed to purchasing the services and will be charged. Finally, the booking cannot be cancelled or changed once it has been made.

Figure 5-1 illustrates the functional approach by the Name-Your-Own-Price (NYOP) mechanism when a consumer uses the model to purchase a product related to accommodation or a flight ticket.

Figure 5-1 NYOP model - Consumer Decision Process
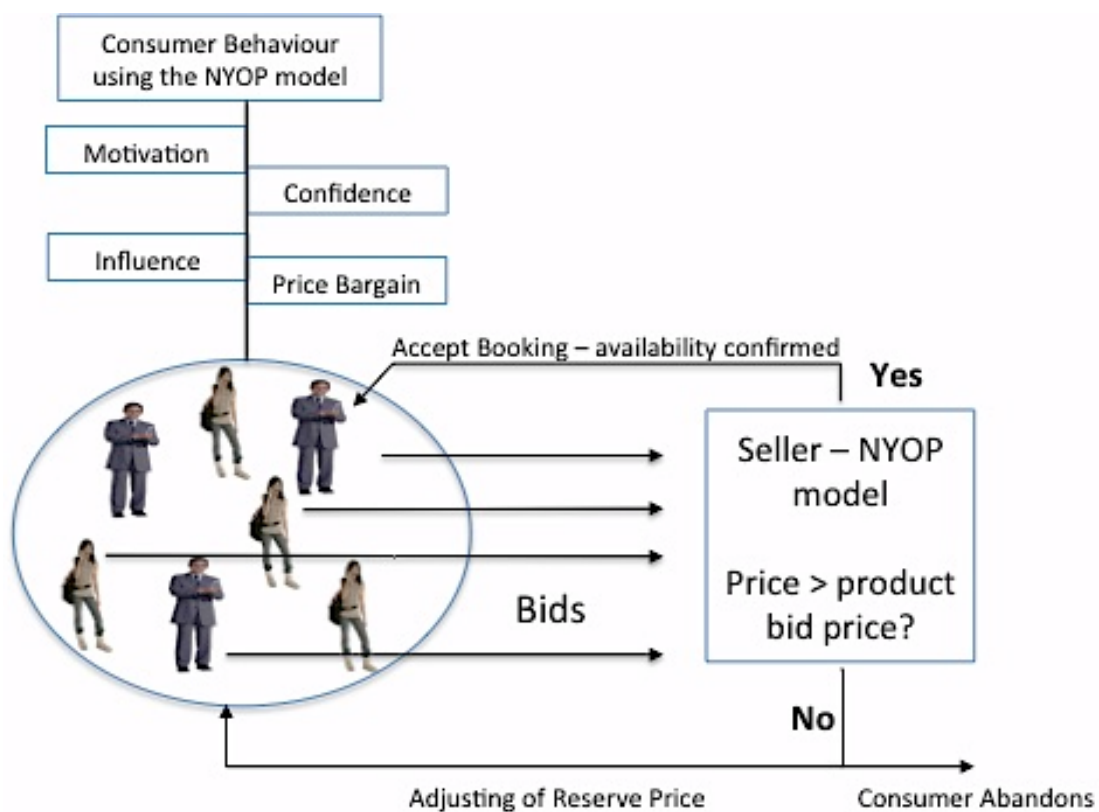
Source: Author

The Name-Your-Own-Price (NYOP) model has become synonymous as an online channel promoted mainly by priceline.com. Although the majority of the total revenue is generated through the NYOP model, the company recently added as an option to consumers the traditional transparent retail travel agency model with disclosed prices and exact hotel names (Shapiro and Shi, 2008).

Nevertheless, the NYOP model works as a reverse auction mechanism, where the property has to set a threshold price, p, hence if the price, p, is lower than the consumer's offer (WTP - bid), the reservation should materialize and a transaction occurs. The property receives p the consumer offer – pays, p_c, and the provider (Priceline.com) keeps the difference $p_c – p$ as its profit plus a margin (Priceline has set a minimum margin, that is, $p_c – p$ > minimum margin) (Talluri and van Ryzin, 2004:521; Anderson and Wilson, 2011). It means that Priceline.com improves revenue through improving the margin algorithm or through a number of successful bids or both. In the case of a rejection, under a certain time period (in some opaque sites immediately, however, of priceline.com site within 12 hours) the consumer has the chance to rebid for the same product.

Because of reservation uncertainty and the requested agreed degree of flexibility by the consumers, the Name-Your-Own-Price mechanism is designed to considerable attract to price sensitive consumers with this level of flexibility. Moreover, the opaque approach provides sellers with an alternative distribution channel to reach new consumers, and low value consumers that are less sensitive to service characteristics (Shapiro and Shi, 2008).

Additionally, the opaque feature allows hotels and airlines to discount prices without cannibalising their pricing policies and jeopardising brand awareness (Wang, Gal-Or, and Chatterjee, 2009). It offers a 'brand shielding' and creates less risk as competitors and other consumers will not know the discounted prices. Moreover, prevents loyal and high value consumers (business travellers) to book at a discounted price because of the considered uncertainty of the reservation characteristics. This uncertainty is unattractive because they would

prefer to know the hotel reservation or flight itinerary details in advance (Talluri and van Ryzin, 2004:521; Shapiro and Shi, 2008).

5.3   **Sample and Pilot Study Analysis**

The study was conducted in two phases. In the first phase, the researcher posed 30 open-ended and close-ended questions, regarding the respondents' demographic characteristics, consumer behaviour and satisfaction levels when using the Name-Your-Own-Price (NYOP) model, along with the consumer intention of buying travel products using the model. The purpose of this pilot study was to improve the reliability and validity of the empirically created measurement scales. The study has been conducted via a web-base survey questionnaire, which measures the exposure and the acceptance of the NYOP model. The survey was distributed through online panels and 760 questionnaires were collected, between September and November 2014.

The collected data was screened, to control the response bias in order to reduce the sampling error. After data screening, responses identified as not fully completed and responses that included one or more unanswered sections were removed. Finally, in aggregate, 554 (72.89%) questionnaires were kept and included for further data analysis. Table 5.1 presents the demographic characteristics of the respondents regarding age, gender, education, and occupation moreover, include respondent's information regarding their experience with the NYOP model (use), and similarly summarize the experience with social media – user content sites (use), as a tool to purchase travel products and services.

From the 554 respondents, the greater participation rate came from males just over one-half 55.8% (309) and the remaining 44.2% (245), were female. Among them, the majority of respondents according to the age ranges were 30 years or younger at 49.6% (275), then the second largest age group 31 – 40 years old at 33% (183), 41 – 50 years old at 10.8% (60), while only 6.5% (36) of the respondents were 51 years or older. In terms of education, the majority of the respondents completed a university undergraduate degree and held a Bachelor's degree from 49.6% (275). An important percentage of the respondents held a graduate degree such as a Master's degree by 18.8% (104). Moreover, the third largest percentage of respondents graduated with a college diploma 17.9% (99), high school 12.1% (67) and completed graduate studies to Ph.D. or equivalent level 1.6% (9) of the total respondents. This indicates that these respondents can be considered mainly young, as almost 83% were up to 40 years old and well-educated Internet users, as the majority held a university degree, either an undergraduate or Master's degree.

With respect to respondents' occupation, the majority of them, approximately 1.56, were employed at a managerial, professional position. Hence, a significant percentage work professionally 35.2% (195), then managers constitute 17% (94) of the respondents. Moreover, still a great number of respondents occupy a sales job 14.4% (80).

In terms of experience of using the name-your-own-price model (NYOP), a majority of respondents 60.3% (334) had experience with the model. This indicates that respondents had frequently used a NYOP model website to purchase travel products or services. The remaining participants 39.7% (220) had never used the model.

Table 5-1 Demographic characteristics of the NYOP sample

Demographic Characteristics and Activities		Frequency	Percent
Gender (n = 554)			
	Female	245	44.2
	Male	309	55.8
Age (n = 554)			
	30 years or less	275	49.6
	31y - 40y	183	33
	41y - 50y	60	10.8
	51y or greater	36	6.5
Education (n = 554)			
	Secondary School	67	12.1
	College - Diploma	99	17.9
	Bachelor's Degree	275	49.6
	Master's Degree	104	18.8
	Ph.D. or equivalent	9	1.6
Occupation (n = 554)			
	Other	68	12.3
	CEO, Managing Director	10	1.8
	Division Director	7	1.3
	Department Director	9	1.6
	Manager	94	17
	Professional	195	35.2
	Technician	50	9
	Sales and Service Worker	80	14.4
	Student	41	7.4
NYOP model Usage (n = 554)			
	Yes	334	60.3
	No	220	39.7

Source: (Author)

The initial questionnaire was totally revised as the pilot study did not verified the expected outcomes. According to the respondents, the original questionnaire was difficult to read and complicated. The goal of the pilot study was to avoid

respondents' misinterpretations and to detect any ambiguities. Based on the comments received, a modified questionnaire was employed for the main study and sent out to online panels.

5.4   **Sample and Main Study Analysis**

The first study it is a market research directed to the final consumer. The study has been conducted through a web-base survey questionnaire, which measures the exposure and the acceptance of the NYOP model. The purpose of the study was to provide evidence of the consumer experience and confidence, measuring his/her perception using the model.

A total of 635 questionnaires were collected. The collected data was screened to control the response bias and reduce sampling errors. After the data screening process, responses identified as not fully completed and responses that included one or more unanswered sections were removed. Finally, in aggregate, 456 (71.81%) questionnaires were kept and included for further data analysis. Table 5.2 presents statistics describing in addition to the demographic characteristics of the respondents including age, gender, education, and occupation. The table also includes information regarding respondents' annual income converted to three different currencies, such as US dollar, GB pound, and Euro, and geographic regions of reside.

From 456 respondents, the greater participation rate came from males just over one-half 54.4% (248) and the remaining 45.6% (208), were female. Among them, the majority of respondents according to the age ranges were 30 years or younger at 43.4% (198), then the second largest age group 31 – 40 years old at 34% (155), 41 – 50 years old at 13.6% (62), while only 9.0% (41) of the respondents were 51 years or older. In terms of education, the majority of the

respondents completed a university undergraduate degree and held a Bachelor's degree from 43.2% (197). An important percentage of the respondents held a graduate degree such as a Master's degree by 27.0% (123). Moreover, the third largest percentage of respondents graduated with a college diploma 16.9% (77), high school 11.8% (54) and completed graduate studies to Ph.D. or equivalent level 1.1% (5) of the total respondents. This indicates that these respondents can be considered as young, as almost 77% were up younger than 40 years old and well-educated Internet users, as the majority held a university degree, either an undergraduate or masters degree.

With respect to respondents' occupation, the majority of them, approximately 1.62, were employed at a managerial, professional position. Hence, a significant percentage work professionally 35.3% (161), and managers constitutes 26.3% (120) of the respondents. Moreover, still a great number of respondents occupy a sales job 13.6% (62), and a technical job 8.3% (38). Finally, students and other represent 3.5% (16) and 6.8% (31) respectively, of the respondents. The fact that only 6.1% (28) of the respondents came from a director or higher position agrees with the concept mentioned above that users of the NYOP model are mainly price sensitive consumers with a level of flexibility (Shapiro and Shi, 2008).

The largest group of participants 56.1% (256) live in the United States and the second major group in Asia 39.5% (180). This is expected as priceline.com initially pioneered the model in US. Because of the international exposure, the company has an increasing presence in Asia (Birger, 2012). Outside the US, in Europe through its parent company Booking.com, the company operates using different model of OTA, the agency model. According to Priceline's CEO, the NYOP model is not as suitable for Europe (Morrison, 2010), mainly because it

does not allow consumers to cancel (as required by European law) their hotel room once they find out the 'opaque' service provider (Anderson and Wilson, 2011). The confirmed reservation is not refundable and not changeable.

With regards to the annual income from the 456 respondents, 27.2% (124) have an annual income lower than $19,999 per annum. Furthermore, the next income categories are from $20,000 to $29,999 and $30,000 to $39,999, respectively, with a percentage of 15.4% (70) and 13.8% (63). Again, this indicates that consumers using the model have a moderate-income level. A significant percentage of 27.2% (124) respondents indicated a higher annual income range from $40,000 to $74,999 per annum. Moreover, from the findings it appears that an important percentage of respondents holding a manager – professional position, so considering that the income is equivalent to these categories, this appears logical. Finally, 16.5% (75) respondents have an annual income of more than $75,000 per annum.

Table 5-2 Demographic characteristics of the NYOP sample

Demographic Characteristics and Activities	Frequency	Percent
Gender (n=456)		
Female	208	45.6
Male	248	54.4
Age (n=456)		
31y - 40y	155	34.0
41y - 50y	62	13.6
51 y or greater	41	9.0
18 - 30 years old	198	43.4
Education (n=456)		
Secondary School	54	11.8
College Diploma	77	16.9
Bachelor's Degree	197	43.2
Graduate Degree (Master's, etc.)	123	27.0
Ph.D. or equivalent	5	1.1
Occupation (n=456)		
CEO, Managing Director	7	1.5
Division Director	4	.9
Department Director	17	3.7
Manager	120	26.3
Professional	161	35.3
Technician	38	8.3
Sales and Service Worker	62	13.6
Student	16	3.5
Other	31	6.8
Region of residency (n=456)		
United States	256	56.1
Canada	8	1.8
Europe	6	1.3
South America	5	1.1
Middle East	1	.2
Asia	180	39.5
Annual Income (n=456)		
Less than $19,999 or (£12,720 // €17,470)	124	27.2
$20,000 - $29,999 or (£12,720 // €17,470 - £19,080 // €26,210)	70	15.4
$30,000 - $39,999 or (£19,080 // €26,210 - £25,440 // €34,940)	63	13.8
$40,000 - $49,999 or (£25,440 // €34,940 - £31,800 // €43,680)	47	10.3
$50,000 - $74,999 or (£31,800 // €43,680 - £47,695 // €65,520)	77	16.9
$75,000 - $99,999 or (£47,695 // €65,520 - £63,595 // €87,360)	46	10.1
$100,000 - $124,999 or (£63,595 // €87,360 - £79,495 // €109,200)	15	3.3
Greater than $125,000 or (£79,495 // €109,200)	14	3.1

Exchange rate: $1= £0.60; €0.875 (rounding) – Source: www.x-rates.com (07.05.2015)

Source: Author

Furthermore, table 5-3 provides respondent's information regarding their experience with the NYOP model (use), and similarly summarize the frequency of times respondents had used the model to book a hotel room for the last two years.

Regarding consumer experience when using the Name-Your-Own-Price model (NYOP), a majority of respondents 92.1% (420) had experience with the model. This indicates that respondents frequently used a NYOP model website to purchase travel products or services. The remaining participants 7.9% (36) had never used the model.

The results revealed that the majority of respondents used a NYOP model website were male 54.3% (228), with females accounting for 45.7% (192). These figures are consistent with the theory that women travellers are more demanding and their main concerns are safety, comfort and convenience (Hudson, 2008:47). The use of the NYOP model creates uncertainty over confirmation details and booking restrictions (Shapiro and Shi, 2008; Talluri and van Ryzin, 2004:521).

Finally, the largest group of respondents 33.6% (153) reported that they used the model at least once a year to book a hotel. Furthermore, a significant percentage of respondents 25.0% (114) and 16.0% (73), respectively, claimed that they used the model to book a hotel several times a year or more often.

Table 5-3 Experience with using NYOP method

Have you ever booked a hotel room or flight using the Name-Your-Own-Price model (NYOP)?		
	Frequency	Percent
Yes	420	92.1
No	36	7.9
Total	456	100.0

Have you ever booked a hotel room or flight using the Name-Your-Own-Price model (NYOP)?					
		Yes	Percent	No	Percent
Gender	Female	192	45.7	16	44.4
	Male	228	54.3	20	55.6
Total		420	100.0	36	100.0

How often have you booked a hotel through a Name-Your-Own-Price model the last two years?		
	Frequency	Percent
Several times a year	114	25.0
Several times a month	73	16.0
Once a year	153	33.6
Less than once a year	116	25.4
Total	456	100.0

Source: Author

5.5 Descriptive Statistics of Construct Items

The researcher in Table 5-4 illustrates statistics describing the respondents' uses of the NYOP model to book a hotel room. The majority of respondents 33.6% (153) use the model once a year to book a hotel, however, almost one-half 41.0% (187 out of 456) of the respondents used the NYOP model several times a year. In the study scenario, 31% (141) of the respondents provided a price range from $126 to $150 (M=$138), which is almost 31% lower than the provided OTA rate, and another 35% (157) of the respondents had a price range that fell in the interval of $100 to $125 (M=$112.5), which is almost 44% lower than the OTA rate. In practice, the above results are expected because consumers using the NYOP model due to the expected substantial price reductions. Also, one half of the respondents 50.9% (232) would search for a price deal online through an online distribution channel (online travel website) before booking a hotel room. The remaining respondents 49.1% (224) would

search for a deal online on two / or more online distribution channels. In practice, 2 out of 3 consumers would search for more than one distribution channel online. According to research, 78% of consumers conduct travel product research before making a purchase (Anderson, 2011). Over one half of the respondents, 53.1% (243) are members of an online travel agencies loyalty program.

Moreover, the researcher in Table 5-5 presents the descriptive statistics of the NYOP approach survey constructs. The researcher reports for each measurement item, mean, standard deviation (SD), and minimum and maximum. The use of descriptive statistics provides an understanding of the variation of each item for the presented data and constructs in this model. The constructs were satisfaction, negative emotions, confidence, price bargain, experience, bid behaviour, motivation, and purchase intention.

Table 5-4 Descriptive statistics about participants' uses of the NYOP model

How often have you booked a hotel through a name-your-own-price model the last two years?

	Frequency	Percent
Several times a year	114	25.0
Several times a month	73	16.0
Once a year	153	33.6
Less than once a year	116	25.4
Total	456	100.0

Have you ever booked a hotel room or flight using the Name-Your-Own-Price model (NYOP)?

	Frequency	Percent
Yes	420	92.1
No	36	7.9
Total	456	100.0

Scenario: Imagine that you want to book a hotel in London (UK) in July 2015. You want to use the name-your-own-price model and book the hotel. Your booking criteria as following: City: London (UK), Hotel category: 4 star, Location: Central London (Type your bid price here ($):)

Price	Frequency	Percent
About $100	104	23.0%
$101 - $125	53	12.0%
$126 - $150	141	31.0%
$151 - $175	52	11.0%
$176 - $200	77	17.0%
Over $201	29	6.0%
	456	100.0
Median	150	
Mean	147	
Std. Deviation	54	

Did you place a bid lower than the online travel agency reference rate? Considering the previous question 10:

	Frequency	Percent
Strongly Disagree	6	1.3
Disagree	11	2.4
Somewhat Disagree	12	2.6
Neither	32	7.0
Somewhat Agree	58	12.7
Agree	169	37.1
Agree Strongly	168	36.8
Total	456	100.0

Before deciding to purchase travel product or services online, you will:

	Frequency	Percent
Search for a deal online through an online distribution channel (online travel website)	232	50.9
Search for a deal online on two / or more online distribution channels.	224	49.1
Total	456	100.0

Are you a member of any online travel agency (OTA) loyalty program, such as Priceline Rewards, Expedia Rewards, Orbitz Rewards etc.?

	Frequency	Percent
Yes	242	53.1
No	214	46.9
Total	456	100.0

Source: Author

Table 5-5 Descriptive statistics for all items used to measure model constructs

Measurement Items	Min.	Max.	Mean	SD
Satisfaction				
I feel satisfied using the NYOP model to book a hotel room or purchase travel products.	1	7	5.27	1.225
I feel satisfied with the purchased product quality (hotel booking) when using the NYOP model.	1	7	5.28	1.240
I feel satisfied with the context choice of hotel products when using the NYOP model.	1	7	5.29	1.196
I feel satisfied that the company understands the value consumers place on the product or service and set minimum rates accordingly.	1	7	5.30	1.189
I am happy when I am able to book travel products with a lower price than I expected.	1	7	5.82	1.154
Negative Emotions				
I feel uncomfortable using the NYOP approach to book a hotel room or purchase travel products.	1	7	3.70	1.898
I regret booking a hotel room or purchase travel products using a bid approach.	1	7	3.43	1.849
I felt confused while purchasing travel products or services using the NYOP approach.	1	7	3.57	1.866
Confidence				
I feel confident using the NYOP approach to book a hotel room or purchase travel products.	1	7	5.11	1.398
I believe that the agencies using a Name Your Own Price approach are selling lower.	1	7	4.88	1.353
I know that using the NYOP approach requires a degree of flexibility (location, non-cancellation etc.).	1	7	5.48	1.178
I know that using the NYOP approach creates a reservation uncertainty (confirmation).	1	7	4.89	1.416
I feel more confident with my willingness to pay (WTP), when I know the reference price.	1	7	5.34	1.179
Price Bargain (Monetary Benefits)				
I obtained better prices using the NYOP model than through the other Online Travel Agencies.	1	7	5.24	1.296
I obtained discounts that most consumers do not get.	1	7	4.89	1.419
I obtained better prices using the NYOP model instead of booking through an Online Travel Agencies offering also extra freebies.	1	7	5.13	1.351
The confirmed price was according to the value of my willingness to pay (WTP).	1	7	5.37	1.194

Experience (Perceived Self Efficacy)

I know where to find the information I need for the manipulation of the bidding prices prior to making a bid.	1	7	4.92	1.468
I always check hotel prices through other distribution channels such as Online Travel Agencies to ensure I will get the best value.	1	7	5.50	1.277
The quality and amount of information using the NYOP approach have a significant decision on my choice.	1	7	5.38	1.162

Bid Behaviour

Using the NYOP model the seller accepted the first bid.	1	7	4.64	1.605
Using the NYOP model the seller did not accept the first bid and I had to repeat a bid at a higher rate.	1	7	4.60	1.607
Using the NYOP model the first and second bid was not accepted and I booked through an Online Travel Agency.	1	7	3.98	1.883
Do you think the NYOP approach is a FAIR price approach?	1	7	5.28	1.255
Do you prefer to book using Posted reference prices instead of the Name Your Own Price approach?	1	7	4.68	1.480

Motivation

I prefer to search hotel deals before I chose which online distribution channel use to make a booking.	1	7	5.45	1.205
It is likely that the NYOP approach I chose is better than the Online travel Agencies method of booking I am currently familiar with.	1	7	5.04	1.309
I am likely to find the best prices purchasing travel products or services online.	1	7	5.34	1.164
I am likely to purchase travel products online from the distribution channel with the best prices.	1	7	5.42	1.163

Purchase Intention

I am always using an online distribution channel to purchase travel products or services.	1	7	5.20	1.286
In the future, I plan to purchase travel product or services using a NYOP approach website.	1	7	5.26	1.353
Using the NYOP approach, I am expecting high product quality for the money I spend.	1	7	5.23	1.244

Source: Author

5.6   **Measurement Model**

To validate the measurement model consisting of latent constructs including satisfaction with the model, confidence, experience (perceived self-efficacy), price bargain (monetary benefits), bid behaviour, negative emotions, and motivation, intention confirmatory factor analysis (CFA) was conducted to assess the items validity in the conceptual model (Figure 5-2).

5.6.1 **Construct Validity**

As emphasized by Churchill (1979), in order to provide evidence of the survey instrument reliability over time, Malhotra (1998) argues that the most common method of validity testing is construct validation. This step is associated with the validity and reliability of the indicators therefore, indicates the 'degree to which the empirical indicators measure the construct' (O'Leary-Kelly and Vokurka, 1998). Another step referred as nomological validity, states how one construct relates to other constructs as a fundamental hypothesis-testing step. Moreover, they refer that confirmatory factor analysis (CFA) is the preferred method to test the constructs for unidimensionality. Correlation Analysis was used to test the component of reliability and determine the correlation coefficient relationship between the variables. However, this study is an exploratory research hence, the researcher will also perform an exploratory factor analysis (EFA), using the principal components analysis (PCA) with varimax rotation. According to O'Leary-Kelly and Vokurka (1998), EFA is preferable for exploratory research.

Figure 5-2 - The proposed conceptual framework – NYOP
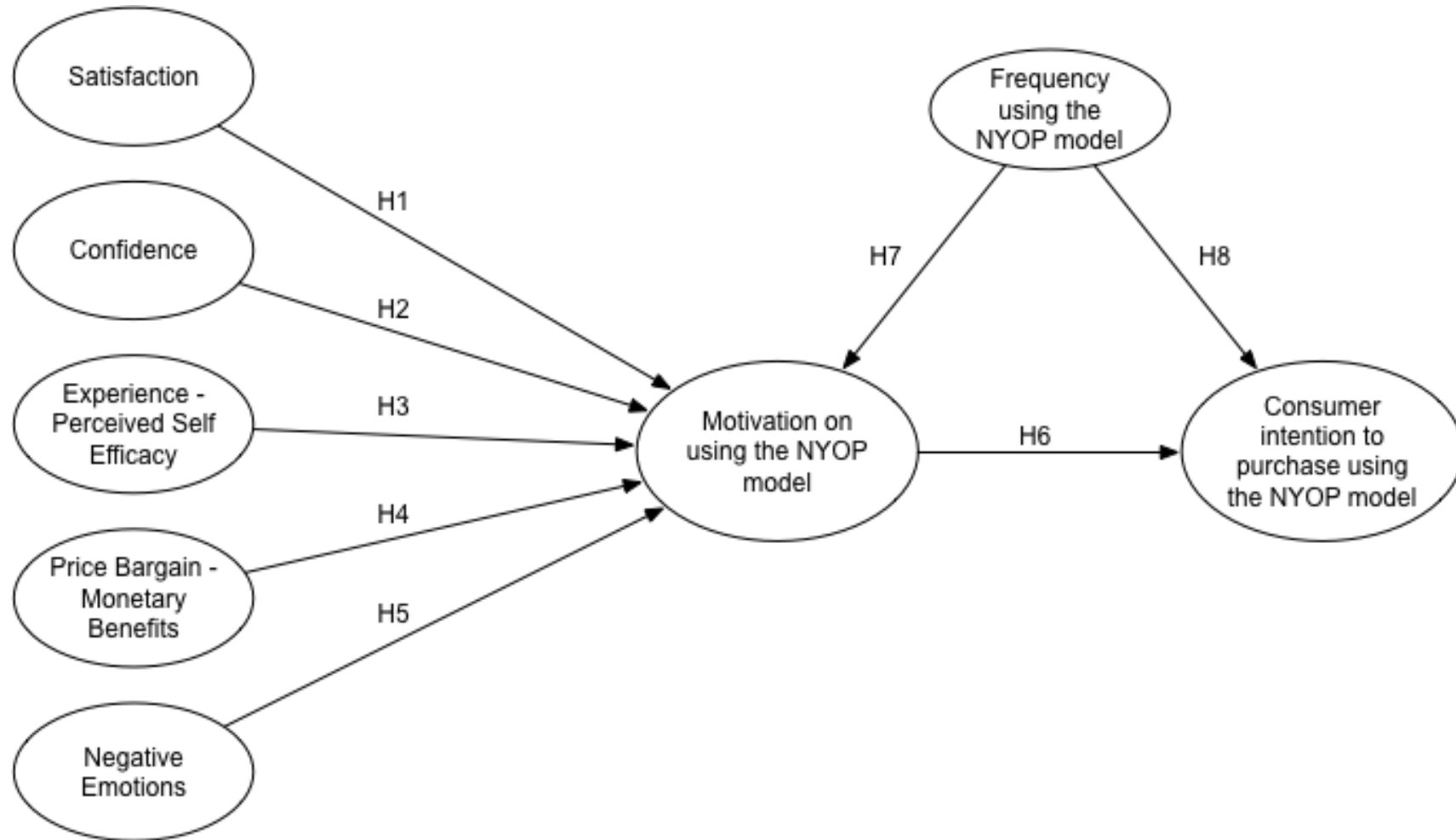
Model summary notes: Independent variables: *satisfaction; confidence; experience – perceived self-efficacy; price bargain – monetary benefits; negative emotions.* Dependent variables: *motivation; purchase intention.* Moderator: *frequency using the NYOP model.*

Source: Author

5.6.2 Exploratory Factor Analyis (EFA)

In this study, factor analysis was conducted for the seven constructs using the principal components analysis (PCA) with varimax rotation. The goal of factor analysis is to reduce 'the dimensionality of the original space and to give an interpretation to the new space, spanned by a reduced number of new dimensions which are supposed to underlie the old ones' (Rietveld and Van Hout, 1993:254). Factor analysis attempts to determine the number of variables and generate intercorrelated variables together under one factor. Therefore, an initial analysis as the standard requirement of factor loading, the cutoff point was set at .40 and the eigenvalues over Kaiser's criterion of 1 were applied (Field, 2013:681). The measurement model was comprised of 32 items. However, after the factor analysis was conducted on the results, this indicated that the estimation of this measurement model did not fit well.

Table 5-6 illustrates results of factors' extraction on the basis of the eigenvalues greater than 1 criterion. The results are identified by 5 factors.

Table 5-6 Total number of factors extracted

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	11.795	36.861	36.861	8.777	27.428	27.428
2	3.557	11.116	47.977	4.258	13.305	40.733
3	2.231	6.972	54.949	3.438	10.744	51.477
4	1.082	3.381	58.331	1.991	6.223	57.700
5	1.004	3.137	61.467	1.205	3.767	61.467
6	.938	2.933	64.400			

Note: Extraction Method: Principal Component Analysis.

Source: Author

Figure 5-3 presents the Scree test used to identify the maximum number of factors that can be extracted. An inspection of the scree plot revealed a linear pattern after the first five (5) factors, which would qualify. The slope of the scree test shows a decreasing trend after the fifth factor in the amount of variance accounted for by each potential factor or construct.

Figure 5-3 Scree Plot indicating five primary factors
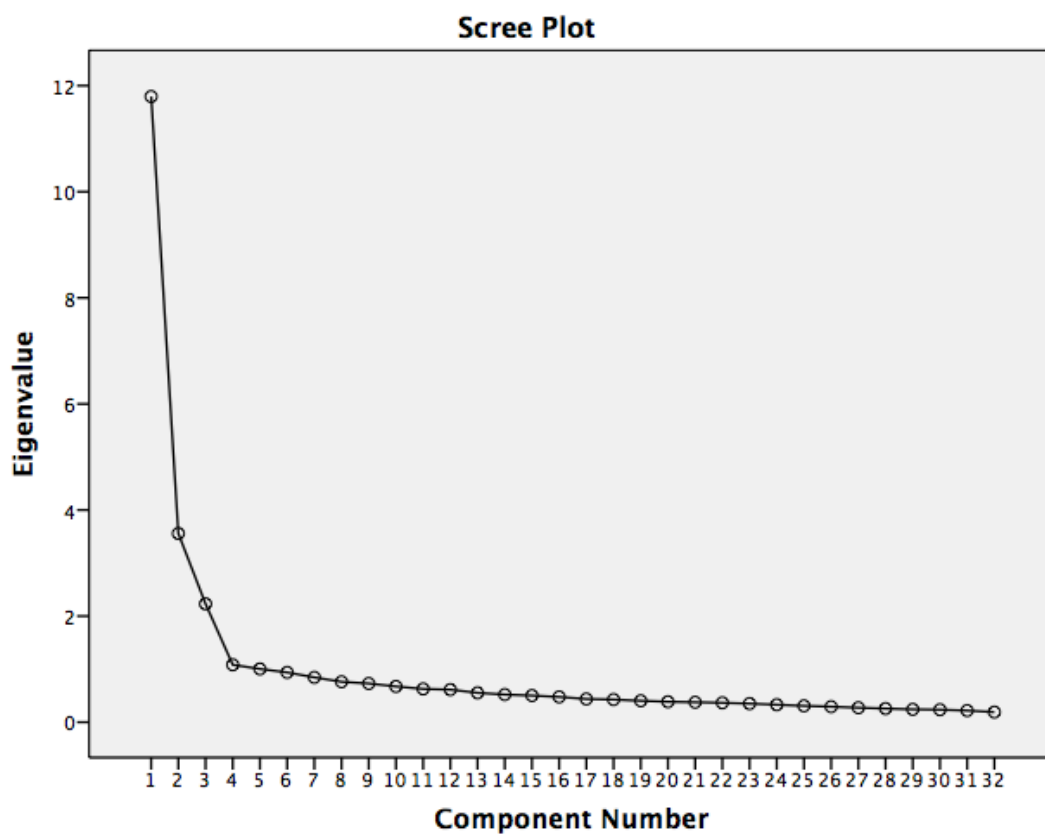
Source: Author

Based on the results of the EFA, for the construct of bid behaviour, two factors were extracted meaning the construct was not unidimensional. The items 'Using the NYOP model the seller accepted the first bid' (BB1), and 'Do you think the NYOP approach is a FAIR price approach?' (BB4), did not fit into the construct

of bid behaviour. The item 'Using the NYOP model the first and second bid was not accepted and I booked through an Online Travel Agency' (BB3) was examined in both factors. The other two measurement items (BB2 and BB5) formed a factor related to the bid behaviour (Table 5-7). The items address the impact of bidding to the consumer. They measure consumer emotions about the bidding outcome and the reaction to an unfair pricing perception. Additionally, the items compare whether the consumer prefers to book using posted reference prices instead of their willingness to pay. The results can be important in practice to additional revenue improvements.

Table 5-7 Factors related to bid behaviour construct

Bid Behaviour	Component	
	Factor 1	Factor 2
BB2	.791	
BB5	.755	
BB3	.695	.373
BB1		.865
BB4		.723
Percent of Variability	38.668	23.451
Eigenvalue	1.933	1.173

Source: Author

The results of the factor analysis of the constructs of satisfaction, price bargain (monetary benefits), negative emotions, experience, motivation and purchase intention indicated that one factor was extracted for each construct, which formed unidimensional constructs.

Table 5-8 presents the remaining initial measurement items with factor loadings.

Table 5-8 EFA – Initial Factor Loadings for Constructs

Items	Satisfaction	Negative Emotions	Confidence	Price Bargain	Experience	Motivation	Intention
SA1	.864						
SA2	.867						
SA3	.881						
SA4	.821						
SA5	.607						
SANE1		.851					
SANE2		.892					
SANE3		.900					
CO1			.712				
CO2			.716				
CO3			.707				
CO4			.464				
CO5			.732				
PB1				.860			
PB2				.814			
PB3				.868			
PB4				.775			
EXP1					.742		
EXP2					.805		
EXP3					.815		
MO1						.763	
MO2						.597	
MO3						.847	
MO4						.807	
INT1							.740
INT2							.827
INT3							.839

Table 5-9 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.943
Bartlett's Test of Sphericity	Approx. Chi-Square	8436.572
	df	496
	Sig.	.000

Source: Author

The result of Kaiser-Meyer-Olkin (KMO) verified the measure of sampling

adequacy for the analysis, KMO = .943, which is great according to Field

(2013:685). Moreover, the Bartlett's Test of Sphericity was significant ($p < .001$), which indicates the relevance of sample data for conducting a factor analysis. Table 5-9 presents the KMO and Bartlett's Test results.

5.6.3 Reliability Tests

Reliability indicates 'the extent to which the data collection techniques or analysis procedures will yield consistent findings' (Saunders, 2009:156), meaning that reliability refers to the 'consistency of the results obtained' (Ryan, 1995). It assesses the consistency of that given construct (Hair *et al.*, 1998:118). According to Nunnally (1978), the generally agreed lower level for Cronbach's alpha value is .70 to be considered reliable. However, as this research is exploratory, Hair *et al.* (1998:118) states that values with alpha level a > .60 are acceptable.

The overall Cronbach's alpha values are estimated for the construct's satisfaction, negative emotions, price bargain, motivation, and intention in this study ranged from .710 to .894, which were greater than Nunnally's (1978) suggested value. This indicated a good level of consistency on the subject responses to the constructs. The only exception was the variables of confidence and experience–perceived self-efficacy however, the Cronbach's alpha estimate was .684, which is higher the cutoff a > .60, so it was also acceptable. Finally, the Cronbach's alpha estimate for bid behaviour with a = .601 was equally acceptable, though reliability being slightly above the .60 cutoff point.

Table 5-10 shows reliability levels. It presents the initial measurement items with factor loadings and Cronbach's *alpha* estimates for each construct.

Table 5-10 Reliability Scales Alphas – Initial constructs

Item code	Constructs and Measurement Items	Factor Loadings	Alpha
	Satisfaction		
SA1	I feel satisfied using the NYOP model to book a hotel room or purchase travel products.	.864	
SA2	I feel satisfied with the purchased product quality (hotel booking) when using the NYOP model.	.867	
SA3	I feel satisfied with the context choice of hotel products when using the NYOP model.	.881	**.870**
SA4	I feel satisfied that the company understands the value consumers place on the product or service and set minimum rates accordingly.	.821	
SA5	I am happy when I am able to book travel products with a lower price than I expected.	.607	
	Negative Emotions		
SANE1	I feel uncomfortable using the NYOP approach to book a hotel room or purchase travel products.	.851	
SANE2	I regret booking a hotel room or purchase travel products using a bid approach.	.892	**.856**
SANE3	I felt confused while purchasing travel products or services using the NYOP approach.	.900	
	Confidence		
CO1	I feel confident using the NYOP approach to book a hotel room or purchase travel products.	.770	
CO2	I believe that the agencies using a Name Your Own Price approach are selling lower.	.737	
CO3	I know that using the NYOP approach requires a degree of flexibility (location, non cancellation etc.).	.686	**.684**
CO4	I know that using the NYOP approach creates a reservation uncertainty (confirmation).		
CO5	I feel more confident with my willingness to pay (WTP), when I know the reference price.	.732	
	Price Bargain Monetary Benefits		
PB1	I obtained better prices using the NYOP model than through the other Online Travel Agencies.	.860	
PB2	I obtained discounts that most consumers don't get.	.814	
PB3	I obtained better prices using the NYOP model instead of booking through an Online Travel Agencies offering also extra freebies.	.868	**.848**
PB4	The confirmed price was according to the value of my willingness to pay (WTP).	.775	

	Experience – Perceived Self Efficacy		
EXP1	I know where to find the information I need for the manipulation of the bidding prices prior to making a bid.	.742	
EXP2	I always check hotel prices through other distribution channels such as Online Travel Agencies to ensure I will get the best value.	.805	**.711**
EXP3	The quality and amount of information using the NYOP approach have a significant decision on my choice.	.815	
	Bid Behaviour		
BB1	Using the NYOP model the seller accepted the first bid.	.865	
BB2	Using the NYOP model the seller did not accept the first bid and I had to repeat a bid at a higher rate.	.791	
BB3	Using the NYOP model the first and second bid was not accepted and I booked through an Online Travel Agency.	.695	**.601**
BB4	Do you think the NYOP approach is a FAIR price approach?	.723	
BB5	Do you prefer to book using Posted reference prices instead of the Name Your Own Price approach?	.755	
	Motivation		
MO1	I prefer to search hotel deals before I chose which online distribution channel use to make a booking.	.763	
MO2	It is likely that the NYOP approach I chose is better than the Online travel Agencies method of booking I am currently familiar with.	.597	**.743**
MO3	I am likely to find the best prices purchasing travel products or services online.	.847	
MO4	I am likely to purchase travel products online from the distribution channel with the best prices.	.807	
	Purchase Intention		
INT1	I am always using an online distribution channel to purchase travel products or services.	.740	
INT2	In the future, I plan to purchase travel product or services using a NYOP approach website.	.827	**.722**
INT3	Using the NYOP approach, I am expecting high product quality for the money I spend.	.839	

Source: Author

Based on the EFA results, the initial measurement items indicated multi-collinearity problems among variables. Multicollinearity takes form when two independent variables are highly correlated with one another in the multiple regression equation (Allen, 1997:177). This interpreted whether or not certain items should be removed in order to eliminate highly correlated items. The researcher identified items and combined constructs as a single factor and deleted items with the lowest factor loadings, equal to .50 for later CFA.

After examination of the factor analysis results in combination with the factor definitions, the researcher compounded constructs for a better fit and adjusted the definitions of the constructs in order to justify the expanded scope (Table 5-11). Therefore, the researcher compounded satisfaction, price bargain and two items from confidence construct and one from experience construct into price monetary benefits (PBM). Additionally, the remaining measurement items from confidence compounded with the experience items and an item from satisfaction 'I am happy when I am able to book travel products with a lower price than I expected' and an item from price bargain 'The confirmed price was according to the value of my willingness to pay (WTP)' establishing the expanded confidence construct (CON). The negative emotions (SANE) construct kept the name and the items. Motivation (MO) and purchase intention (INT) kept their names but gained or moved some items. Motivation gained 'I am always using an online distribution channel to purchase travel products or services' from intention and removed 'It is likely that the NYOP approach I chose is better than the Online Travel Agencies method of booking I am currently familiar with' to intention. Finally, purchase intention gained 'The confirmed price was according to the value of my willingness to pay (WTP)'

from price bargain. The researcher deleted 5 measurement items across the constructs to enhance reliability (Cronbach's alpha), which ranged from .814 to .916. These constructs were selected to conduct the confirmatory factor analysis (CFA).

An important goal in selecting scale items, as a valid measure of an underlying construct, is unidimensionality rather than internal consistency (Clark and Watson, 1995). After rotation the scale items should possess a significant loading, indicating a statistically valued contribution. This means that factor analysis can play an important role, as if such an item is not significantly correlated with any of the factors or does not provide a conceptually vital dimension to the measure, the item can be reduced or removed to another factor (Beavers, Lounsbury, Richards, Huck, Skolits, and Esquivel, 2013), because Cronbach's coefficient was lower than the minimum cutoff score of 0.7. This consolidation is not considered to be a problem (Kim and Eves, 2016).

Table 5-11 illustrates how the constructs changed due the combination of constructs, the factor loadings and the reliability estimates (Composite Reliability (CR), Average Variance Extracted (AVE), Cronbach's alpha).

Table 5-11 EFA – Final changes to constructs

Factors	Factor Loading	Composite Reliability	Average Variance Extracted	alpha
Price Monetary Benefits				
I feel satisfied using the NYOP model to book a hotel room or purchase travel products.	.812			
I feel satisfied with the purchased product quality (hotel booking) when using the NYOP model.	.818			
I feel satisfied with the context choice of hotel products when using the NYOP model.	.828			
I feel satisfied that the company understands the value consumers place on the product or service and set minimum rates accordingly.	.758			
I feel confident using the NYOP approach to book a hotel room or purchase travel products.	.816			
I believe that the agencies using a Name Your Own Price approach are selling lower.	.638	**.910**	**.562**	**.916**
I obtained better prices using the NYOP model than through the other Online Travel Agencies.	.796			
I obtained discounts that most consumers don't get.	.718			
I obtained better prices using the NYOP model instead of booking through an Online Travel Agencies offering also extra freebies.	.783			
I know where to find the information I need for the manipulation of the bidding prices prior to making a bid.	.626			
Percent of Variability		58.166		
Eigenvalue		5.817		

Confidence	Factor Loading	Composite Reliability	Average Variance Extracted	alpha
I know that using the NYOP approach requires a degree of flexibility (location, non-cancellation etc.).	.733			
I feel more confident with my willingness to pay (WTP), when I know the reference price.	.746			
I am happy when I am able to book travel products with a lower price than I expected.	.729			
The confirmed price was according to the value of my willingness to pay (WTP).	.752	**.837**	**.462**	**.838**
I always check hotel prices through other distribution channels such as Online Travel Agencies to ensure I will get the best value.	.735			
The quality and amount of information using the NYOP approach have a significant decision on my choice.	.769			
Percent of Variability		55.367		
Eigenvalue		3.322		

Negative Emotions	Factor Loading	Composite Reliability	Average Variance Extracted	alpha
I know that using the NYOP approach requires a degree of flexibility (location, non-cancellation etc.).	.851			
I feel more confident with my willingness to pay (WTP), when I know the reference price.	.892	**.858**	**.669**	**.856**
I am happy when I am able to book travel products with a lower price than I expected.	.900			
Percent of Variability		77.684		
Eigenvalue		2.331		

Motivation	Factor Loading	Composite Reliability	Average Variance Extracted	alpha
I prefer to search hotel deals before I chose which online distribution channel use to make a booking.	.752			
I am likely to find the best prices purchasing travel products or services online.	.825			
		.817	.529	.814
I am likely to purchase travel products online from the distribution channel with the best prices.	.839			
I am always using an online distribution channel to purchase travel products or services.	.794			

Percent of Variability	64.473	
Eigenvalue	2.579	

Purchase Intention	Factor Loading	Composite Reliability	Average Variance Extracted	alpha
In the future, I plan to purchase travel product or services using a NYOP approach website.	.858			
Using the NYOP approach, I am expecting high product quality for the money I spend.	.772			
		.841	.569	.839
It is likely that the NYOP approach I chose is better than the Online Travel Agencies method of booking I am currently familiar with.	.834			
Do you think the NYOP approach is a FAIR price approach?	.817			

Percent of Variability	67.381	
Eigenvalue	2.695	

Source: Author

Moreover, composite reliabilities (CR) and the average variance extracted (AVE) were used to assess the reliability estimates (Table 5-11). The composite reliabilities (CR) were used to assess the degree of consistency between multiple measurements of a variable (Hair et al., 1998). The CR were calculated using the measures suggested by Fornell and Larcker (1981), CR $\eta = \frac{(\Sigma \lambda \gamma \iota)2}{(\Sigma \lambda \gamma \iota)2 + (\Sigma \varepsilon \iota)2}$ where CR = composite reliability for scale η; $\lambda \gamma \iota$ = standardized loading for scale item $\gamma \iota$, and $\varepsilon \iota$ = measurement error for scale item $\gamma \iota$ (Fornell and Larcker, 1981). The CR for the five constructs range from .817 to .910 and all exceeding 0.70, which is the acceptable cutoff level suggested by Bagozzi and Yi (1988).

The average variance extracted (AVE) values ranging from .529 to .669, which exceeded the cutoff level .50 (Fornell and Larcker, 1981; Bagozzi, Yi, and Phillips, 1991), except the confidence construct value .462, which is lower than the suggested level. The AVE values used to measure the convergent validity were calculated using the V $\eta = \frac{\Sigma \lambda \gamma \iota 2}{\Sigma \lambda \gamma \iota 2 + \Sigma \varepsilon \iota}$ where Vη = average variance extracted for scale η; $\lambda \gamma \iota$ = standardized loading for scale item $\gamma \iota$, and $\varepsilon \iota$ = measurement error for scale item $\gamma \iota$ (Anderson and Gerbing, 1988; Fornell and Larcker, 1981).

5.7 Assumption Testing - Correlation Coefficient of Constructs

To test the strength of the relationship between the variables a correlation test was employed. Table 5-12 presents the correlation coefficients between the constructs. Correlations among variables ranged from -.122 to .847, implying that the constructs are moderately to highly correlated with each other ($p <$ .0.01). Four correlations were moderately high: between price monetary benefits and purchase intention ($r = .847$), between price monetary benefits and confidence ($r = .717$), between confidence and purchase intention ($r = .714$), and between confidence and motivation ($r = .712$). However, the values are lower than .90, hence are independent of each other, based at the suggested level of Moore (2007). Finally, one correlation the negative emotions (SANE) construct, which was not significantly correlated with the motivation (MOT) factor this indicates no relationship.

Table 5-12 Correlation coefficients of constructs: initial measurement items

Constructs	Mean	SD	PriceMB	SANE	CFD	MOT	PINT
Price Monetary Benefits (PriceMB)	5.128	.994	1				
Negative Emotions (SANE)	3.569	1.648	-.119[*]	1			
Confidence (CFD)	5.480	.885	.717[**]	-.114[*]	1		
Motivation (MOT)	5.354	.965	.558[**]	.037	.712[**]	1	
Purchase Intention (PINT)	5.202	1.059	.847[**]	-.122[**]	.714[**]	.579[**]	1

Note: **. Correlation is significant at the 0.01 level (2-tailed).

Note: *. Correlation is significant at the 0.05 level (2-tailed).

Source: Author

5.7.1 Assumption Testing – Tests of Normality

In strengthening the assessment process of the normality of the collected data, a nonparametric statistical test was conducted. The Kolmogorov-Smirnov (K-S) test and Shapiro-Wilk test were conducted to calculate the level of significance of the differences from a normal distribution. Table 5-13 includes both statistical tests, the degree of freedom (sample size) and the significance value of this test. All statistics for both tests were found significant. The Sig. is less than $p < .05$, therefore, the data deviates from a normal distribution (Field, 2013:187).

Table 5-13 Tests of Normality

Constructs	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
PriceMB	.080	456	.000	.972	456	.000
SANE	.088	456	.000	.956	456	.000
CFD	.079	456	.000	.970	456	.000
MOT	.097	456	.000	.969	456	.000
PINT	.084	456	.000	.965	456	.000

a. Lilliefors Significance Correction

Source: Author

The Lilliefors significance correction is based on the greatest discrepancy between the sample cumulative distribution and the Normal cumulative distribution for the case when the mean and variance of the normal distribution is unknown. The null hypothesis of normality is rejected if $D > c$ where D is the distribution and c is the cut-off value (Dallal and Wilkinson, 1986; Laha, 2005).

5.7.2   Confirmatory Factor Analysis (CFA)

Confirmatory factor analysis (CFA) was conducted using AMOS to validate the initial measurement model. The model was estimated using the maximum likelihood method. It is suggested that confirmatory factor analysis should be conducted after exploratory factor analysis has been estimated, and then CFA will confirm and 'fix' the measurement model scales, and the relationships between constructs are tested using the structural model (Hair *et al.,* 1998:600). The first step in evaluating the results is establishing acceptable estimates and then assessing the constructs for unidimensionality and reliability. Therefore, the researcher used Goodness-of-fit indexes including model chi-square, goodness-of-fit (GFI), comparative fit index (CFI), Tucker-Lewis index (TLI), and root mean square error of approximation (RMSEA), to estimate the CFA results. The chi-square test should not be significant otherwise, it indicates a lack of satisfactory model fit. The smaller the chi-square, the better the fit of the model (McIver and Carmines, 1981). However, chi-square is affected by the sample size as larger samples yield a significant chi-square value, model complexity and distribution of variables also affect the chi-square value and the test may be misleading (Hair *et al.*, 1998:634). GFI should be equal to or greater than .90 to indicate a good fit and to accept the model or GFI value of .95 or higher as recommended by Schumacker and Lomax (2004). Other criteria for the Goodness-of-fit test are RMSEA, CFI, TLI. RMSEA, there is good model fit if the degree of freedom is less than or equal to .05 (Hu and Bentler, 1999); an adequate fit value is between 0.05 and less than or equal to .08 (Schumacker and Lomax (2004). CFI should be equal to or greater than .90 to accept the model. Similarly, if TLI is greater than or equal to .90 this indicates an

acceptable model fit, and equal or greater than .95 a good model fit (Schumacker and Lomax, 2004). The initial results indicated a relatively poor model fit to the data with chi-square value of 1048.35 with 314 degrees of freedom, which was statistically significant at $p < .001$. The other model fit indices were either not acceptable with $\chi2/df$ ratio = 3.339; GFI = .841; CFI = .899; TLI = .887; and RMSEA = .072 (Hair *et al*., 1998:634).

Therefore, due to poor model fit, the researcher checked and conducted a separate CFA for the customer motivation and intention constructs whilst the other three latent constructs were pooled together to build another measurement model.

A CFA was conducted with the three independent variables: price monetary benefit, confidence, and negative emotions to validate the model fit of the measurement model of 23 items. The initial results of this measurement model did not fit well. The results indicated a relatively poor model fit with $\chi2$ (149) = 577.941; $p < .001$; $\chi2/df$ ratio = 3.879; GFI = .866; CFI = .909; TLI = .895; and RMSEA = .080. The results showed that several items were highly correlated with other items in the measurement model, which indicates multi-collinearity problems among the exogenous variables. First, on the price monetary benefit construct, measurement items with low factor loadings were identified and a total of three items were eliminated. These three items PB2, PB3, and EXP1 moved to the other constructs. Moreover, based on an analysis of the standardized residual covariances, two measurement items were deleted (CO2) 'I feel more confident with my willingness to pay (WTP), when I know the reference price', and EXP3 'The quality and amount of information using the NYOP approach have a significant decision on my choice', because it presented a highly correlation with other construct. One measurement item

(BB4) was moved from the purchase intention construct to the price monetary benefit variable. After deleting these items, the CFA results with 15 items (Figure 5-4) illustrated a satisfactory model with $\chi2$ (87) = 290.189; p < .001; $\chi2/df$ ratio = 3.336; GFI = .920; CFI = .944; TLI = .933; and RMSEA = .072. Based on the results, the model was acceptable because the values for GFI, CFI, and TLI were greater than .90 and the value for RMSEA was below .08, representing a satisfactory model fit (Hair *et al*., 1998:634).

Figure 5-4 CFA for Price Monetary Benefits, Confidence, and Negative Emotions
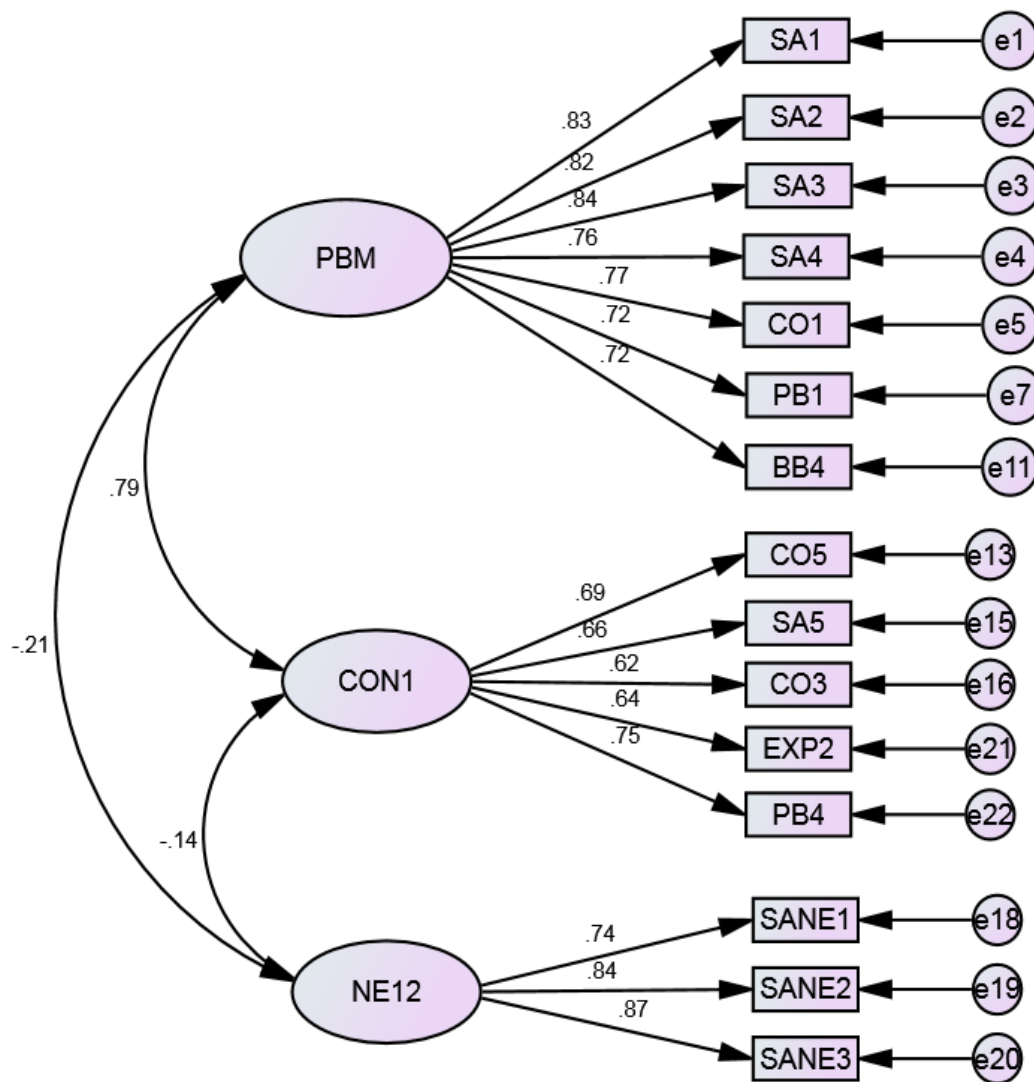
Model summary statistics: $\chi2$ (87) = 290.189; p < .001; $\chi2/df$ ratio = 3.336; GFI = .920; CFI = .944; TLI = .933; and RMSEA = .072.

Source: Author

The model (Figure 5-4) was re-specified accordingly to adjust the changes. After evaluating the modification indices, CFA was conducted with the 8 measurement items (4 for motivation and 4 for purchase intention), and the model fit for the revised measurement model was still found to be unacceptable with $\chi2$ (19) = 68.704; p < .001; $\chi2/df$ ratio = 3.616; GFI = .962; CFI = .967; TLI = .952; and RMSEA = .076. Using the same process, the researcher identified items causing fit problems due to their high error covariance, and were deleted from the scale and replaced with other items. Therefore, the revised measurement of purchase intention indicated that the measurement items INT3 (Using the NYOP approach, I am expecting high product quality for the money I spend) and BB4 (Do you think the NYOP approach is a FAIR price approach?) cause a fit problem was dropped and retained for testing with the other variables. The items replaced with PB2 'I obtained discounts that most consumers don't get', PB3 'I obtained better prices using the NYOP model instead of booking through an Online Travel Agencies offering also extra freebies', and EXP1 'I know where to find the information I need for the manipulation of the bidding prices prior to making a bid', and the revised purchase intention consisted of 5 items. After two revisions the CFA results showed an acceptable measurement model fit (Figure 5-5) with $\chi2$ (26) = 65.338; p < .001; $\chi2/df$ ratio = 2.513; GFI = .970; CFI = .976; TLI = .967; and RMSEA = .058. Since the ratio ($2/df$ = 2.513) fell in the range of 1 and 3, this indicates an acceptable model fit (McIver and Carmines, 1981).

Figure 5-5 shows the revised CFA results for motivation and purchase intention construct.

Figure 5-5 Revised CFA results for Motivation and Purchase Intention
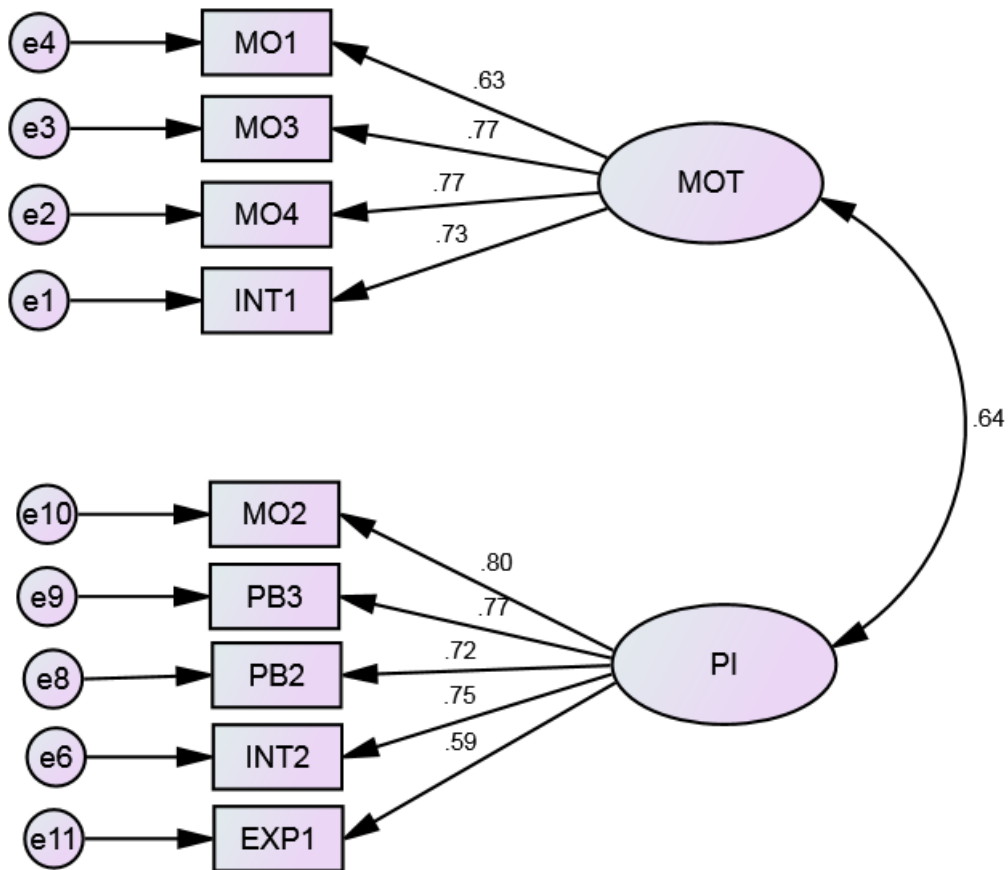
Model summary statistics: $\chi2$ (26) = 65.338; p < .001; $\chi2/df$ ratio = 2.513; GFI = .970; CFI = .976; TLI = .967; and RMSEA = .058

Source: Author

As a result, eight variables in total were deleted due to poor performance, low t-values, and factor loadings (Anderson and Gerbing, 1988).

The final correlation coefficients of constructs are presented in Table 5-14. All variables were moderately to highly correlated with each-other (p < .0.01) with correlations ranging from -.183 to .841, except the negative emotions (NEmotions) construct, which was not significantly correlated with the

motivation (MOT) and purchase intention (Intention) factors, this indicates no relationship.

Table 5-14 Correlation of Constructs - final measurement model

Constructs	Price_MB	NEmotions	Confidence	Motivation	Intention
Price Monetary Benefits (Price_MB)	1				
Negative Emotions (NEmotions)	-.183**	1			
Confidence	.683**	-.111*	1		
Motivation (MOT)	.546**	.037	.689**	1	
Intention (PI)	.841**	-.090	.640**	.535**	1
Mean	5.251	3.569	5.501	5.354	5.045
Std. Deviation	1.022	1.648	.898	.965	1.083

Note: **. Correlation is significant at the 0.01 level (2-tailed).

Note: *. Correlation is significant at the 0.05 level (2-tailed).

Source: Author

Figure 5-6 The final hypothesized model after CFA
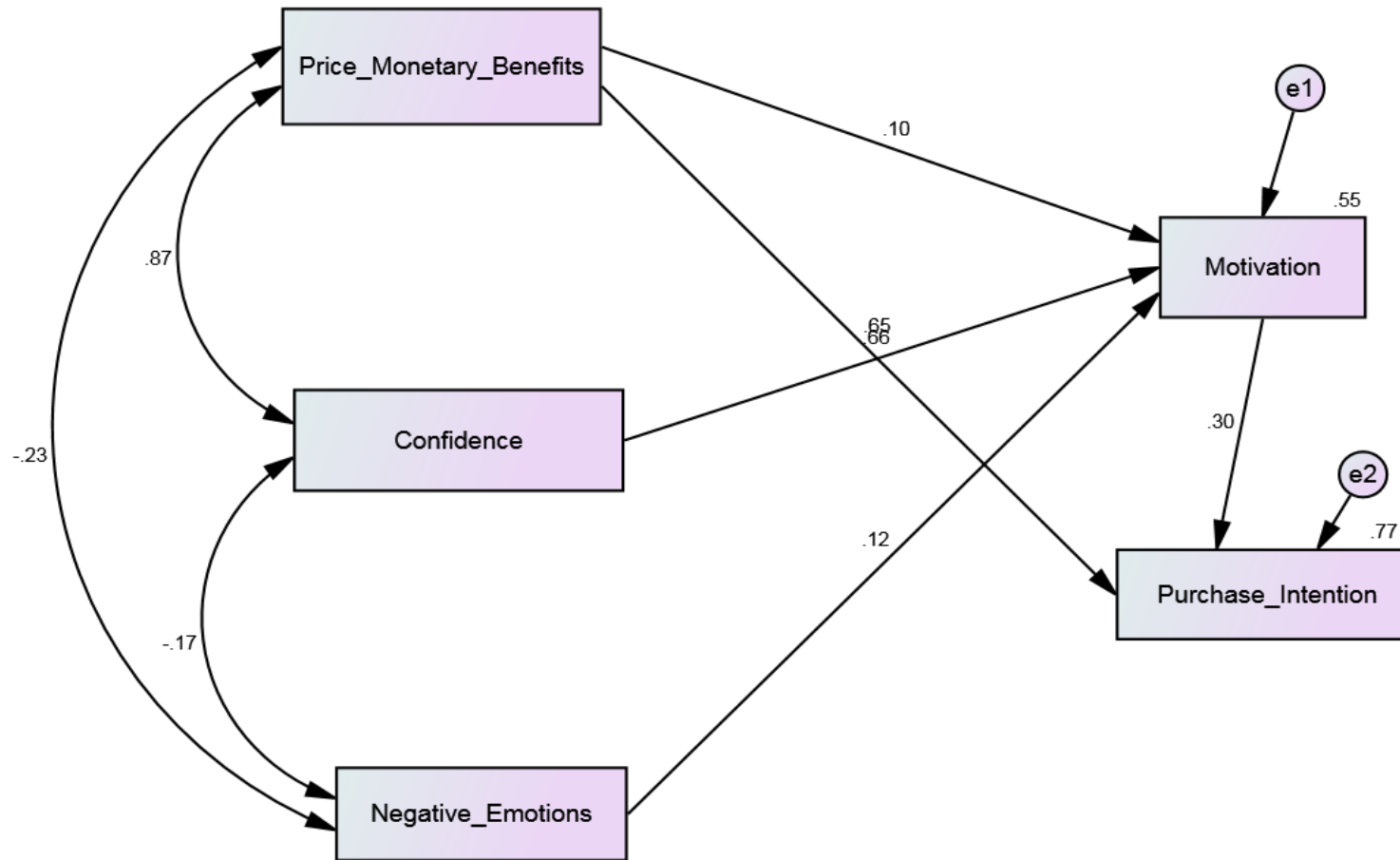
Model summary statistics: $\chi2$ (2) = 2.452; p < .001; $\chi2/df$ ratio = 1.226; GFI = .998; CFI = 1.00; TLI = .999; and RMSEA = .022

Source: Author

5.8   **Results and Discussion**

Multiple regression analysis with hierarchical methods of entry was performed to test the relationships. Hence, the independent variables are entered in two stages. Firstly, the independent variables that we want to control are entered into the regression. Secondly, the independent variables whose relationship we want to examine are entered after the controls. According to Hair *et al*. (1998), multiple regression analysis is utilized to test the hypothesized relationships between a single dependent variable and several independent variables. Therefore, the researcher created two separate series of five regression models (Tajeddini, 2015), to assess the degree and character of the relationship among the variables, evaluate the change in the amount of variance explained (ΔR^2) to test the interaction effects, and conducted overall an incremental F tests of statistical significance (Tajeddini, 2015; Hair *et al.,* 1998:161).

Following the above procedure step by step, the researcher entered the control variables into the regression equation in block. The researcher assigned three predictor variables in steps 2, 3, and 4, three two-way interactions in steps 5, 6, and 7, separated the consumer frequency using the NYOP model into three different periods to frequency several times a year (FRQ_STAY), frequency several times a month (FRQ_STAM), and frequency once a year (FRQ_OAY). Finally, three two-way interactions in steps 8, 9, and 10, frequency using the NYOP model, as aggregate data (FRQ_All). Table 5-15 to 5-21 illustrates the results of the hierarchical regression analysis.

The researcher also employed a test for multicollinearity. The variation inflation factor (VIF) was close to 1 for every variable (Table 5-15 to 5-21). A VIF of 1 indicates there is no correlation among the independent variable and the remaining predictor variables. The VIF acceptance level is between 1 to 4, more

than 4 warrants further investigation, whilst VIFs as the maximum level of 10 is a signs of a serious collinearity problem and require correction (Hair *et al.*, 1998).

The initial structural model proposed relationships comprising five exogenous constructs (satisfaction, confidence, experience-perceived self efficacy, price bargain – monetary benefits, and negative emotions) and two endogenous (motivation, and purchase intention) constructs. Since several constructs were combined, the revised structural model (Figure 5-6) comprised of the price monetary benefits construct, confidence, negative emotions, motivation and purchase intention construct. Therefore, satisfaction and price bargain constructs were combined into a single construct price monetary benefit, and H1 and H4 were deleted. A new path between price monetary benefits and motivation has been created as H9: price monetary benefits have a significant influence on consumer motivation for using the NYOP model. Hence, it was hypothesized that consumers will perceive a major price benefit, as motivation played an important mediator and influenced purchase intention to use the NYOP model to book a hotel.

In addition, the researcher used three control variables, which are important in order to measure the structural model relationships. The results in Table 5-15 showed that while the outline was the same with relation to motivation and purchase intention, the control variables, that is, gender, education, and annual income, had a positive and significant impact on motivation when using the NYOP model (β = -.03; p < .001); (β = .01; p < .001); (β = .10; p < .05); and in intention to use the NYOP model to book a hotel (β = .02; p < .001); (β = -.02; p < .001); (β = .23; p < .001); respectively. It is clear that annual income has a higher level of overall process indicating that the level of income creates higher

motivation to utilize the NYOP model and purchase intention to book travel products. These results are consistent with earlier research (Bodea and Ferguson, 2014).

As presented in Table 5-15, price monetary benefits (Price_MB) is significantly related to motivation (β = .54; p < .001) and purchase intentions (β = .84; p < .001). These results support Hypothesis 9, which states that price monetary benefits positively influences consumer motivation for using the NYOP model, and this motivation has a significant influence on consumer purchase intention to use the NYOP model to book a hotel, hence the consumer will perceive a major price benefit. Perceived price benefits are positively associated with a consumer's satisfaction with the purchase of travel products. Moreover, these findings validate Nagle and Holden's (2002) conceptual statement that consumers want to pay a price, which reflects the product value. Similarly, consumers feel satisfied using the NYOP model and with the product choice and hotel quality. Moreover, consumers feel they have obtained better prices using the NYOP model as oppose to using other online travel agencies. These findings are in contrary to the findings of Huang and Sosic's (2009) work that suppliers may not benefit from the existence of the NYOP channel as high-end consumers may demonstrate low-end behaviour. In practice, this argument is not in agreement with the statement due to uncertainty over details (confirmation) and restrictions the NYOP model creates (Shapiro and Shi, 2008; Talluri and van Ryzin, 2004:521). In addition, these findings reinforce the argument that the NYOP mechanism is designed to considerably attract low value consumers and price sensitive consumers with this level of flexibility, which are less sensitive to service characteristics (Shapiro and Shi, 2008). These findings support the above arguments, while price monetary benefits

demonstrated positive and significant relationships between income and motivation and purchase intention and price monetary benefits ($\beta_{incomePMB \rightarrow MO}$ = .07; p < .001; $\beta_{incomePMB \rightarrow Pint}$ = -.03; p < .05).

In addition, Table 5-15 (step 3) shows confidence had a positive and significant main effect on motivation (β = .69; p < .001) and purchase intention (β = .66; p < .001). Therefore, Hypothesis 2 was supported; as the examination of the results suggested that confidence (CO) had a significant positive influence on a consumer's motivation to use the NYOP model. Nevertheless, the results reported that consumers are more confident to use the NYOP model, as they are aware that the model requires flexibility regarding the location and cancellation policies. Moreover, consumers feel more confident in their WTP when reference prices were available. However, the important positive value for consumers related to how confident they feel when the confirmed price was according to their WTP, and that the confirmed price was lower than what was expected. Such findings validate Talluri and van Ryzin (2004), that a consumer confirms the reservation only if they feel that the reservation rate equals the offered price. This also reinforces Bodea and Ferguson (2014:217) conceptual argument that a consumer believes that it is eligible to a reasonable price. Following control variables, Hypothesis 2 was also supported by the relationship between control variable education and motivation ($\beta_{educationCO \rightarrow MO}$ = .03; p < .001).

Due to the changes on the conceptual proposed framework, two additional hypotheses were not supported: Hypothesis 3, which refers to experience having a significant influence on a consumer's motivation when using the NYOP model and Hypothesis 4, which discusses price bargaining as having a significant influence on a consumer's motivation when using the NYOP model.

Both Hypotheses have been integrated with the new hypotheses or the measurement items have been deleted during the factor analysis.

However, contrary to our expectation and literature review (c.f. Özer and Zheng, 2012) the negative emotions construct was not statistically significant for creating motivation (β = .04; p = .145) and intention to purchase using the NYOP model (β = -.08; p = .387). Hence, hypothesis 5 (negative emotions have a significant influence on consumer motivation to use the NYOP model) is not supported. The construct negative emotions was not found to have any significant effect on the motivation which influences consumer purchase intention (p > .01). The results show that the negative outcome was on average lower on consumer purchase intention using the NYOP model than on consumer motivation. Hence, consumers felt uncomfortable using a bid approach to book a hotel room. Since the NYOP model procedure is based on uncertainty, consumers evaluate the outcome on gain or losses compared to a reference point. However, the interaction term for income was statistically significant ($\beta_{incomeNEmotions \rightarrow MO}$ = .10; p = .024), this indicates that the construct differs across the control variables (Table 5-15). In fact, that means that the subject income generates no regret (negative emotion) to the consumer using the NYOP model. The outcome can be supported with the explanation that the model is mainly concentrated to price sensitive consumers with a low income.

Table 5-15 Results of hierarchical moderated regression analysis

Predictor Variables	Motivation (MO)		Purchase Intention (Pint)		VIF	Findings
	Five-step hierarchical Regression analysis		Five-step hierarchical Regression analysis			
	β	t	β	t		
Step 1: control variables						
Participant Gender (Gender)	-.03	-.74	.02	.61	1.04	
Participant Education (Education)	.01	.36	-.02	-.55	1.02	
Participant Annual Income (Income)	.10	2.18***	.23	.23	1.02	
R^2	.013		.001			
Model fit	$F = 1.96$		$F = .20$			
Adjusted R^2	.00		-.005			
Step 2: main effects						
Participant Gender (Gender)	-.05	-1.29	.004	.16	1.04	
Participant Education (Education)	.02	.49	-.02	-.87	1.02	
Participant Annual Income (Income)	.07	1.93	-.03	-1.16	1.02	
Price Monetary Benefits (Price_MB)	.54	13.85***	.84	33.11***	1.00	H9 supported
R^2	.30		.001			
Model fit	$F = 50.10$***		$F = 274.75$***			
Adjusted R^2	.30		.70			
ΔR^2	.289		.708			

ΔR^2 means the increase in R^2 from the model to the previous model.

* $p < .05$, ** $p < .01$, *** $p < .001$.

Predictor Variables	Motivation (MO)		Purchase Intention (Pint)		VIF	Findings
	Five-step hierarchical Regression analysis		Five-step hierarchical Regression analysis			
	β	t	β	t		
Step 3: main effects						
Participant Gender (Gender)	-.04	-1.31	.02	.54	1.04	
Participant Education (Education)	.03	.89	-.01	-.37	1.02	
Participant Annual Income (Income)	-.038	-1.09	-.12	-3.36**	1.06	
Confidence	.69	20.06***	.66	18.21***	1.04	H2 supported
R^2	.478		.425			
Model fit	F = 103.42***		F = 83.24***			
Adjusted R^2	.474		.42			
ΔR^2	.46		.424			
Step 4: main effects						
Participant Gender (Gender)	-.03	-.73	.02	.59	1.04	
Participant Education (Education)	.01	.29	-.02	-.43	1.03	
Participant Annual Income (Income)	.10	2.26**	-.003	.07	1.02	
Negative Emotions (NEmotions)	.04	.98	-.08	-1.87	1.01	H5a,b rejected
R^2	.015		.009			
Model fit	F = 1.71		F = 1.03			
Adjusted R^2	.006		.000			
ΔR^2	.002		.008			

ΔR^2 means the increase in R^2 from the model to the previous model.

* $p < .05$, ** $p < .01$, *** $p < .001$.

Source: Author

Table 5-16 Results of hierarchical moderated regression analysis (PMB variable and frequency as moderator)

Predictor Variables	Motivation (MO)		Purchase Intention (Pint)		VIF	Findings
	Five-step hierarchical Regression analysis		Five-step hierarchical Regression analysis			
	β	t	β	t		
Step 5: interactions						
Participant Gender (Gender)	-.06	-1.62	.008	.31	1.05	
Participant Education (Education)	-.007	-.17	-.01	-.51	1.05	
Participant Annual Income (Income)	.04	1.02	-.02	-.85	1.04	
Price Monetary Benefits (Price_MB)	.23	3.61***	.89	20.66***	2.91	
PMB x FRQ_STAY	.23	4.65***	-.03	-1.17	1.72	
PMB x FRQ_STAM	.21	4.90***	-.07	-2.42**	1.37	
PMB x FRQ_OAY	.24	4.56***	-.01	-.42	1.93	H7a supported
R^2	.36		.71			H8a supported
Model fit	$F = 36.29$***		$F = 159.16$***			
Adjusted R^2	.35		.70			
ΔR^2						

ΔR^2 means the increase in R^2 from the model to the previous model.
* $p < .05$, ** $p < .01$, *** $p < .001$.

Source: Author

Table 5-17 Results of hierarchical moderated regression analysis (Confidence variable and frequency as moderator)

Predictor Variables	Motivation (MO)		Purchase Intention (Pint)		VIF	Findings
	Five-step hierarchical Regression analysis		Five-step hierarchical Regression analysis			
	β	t	β	t		
Step 6: Interactions						
Participant Gender (Gender)	-.04	-1.29	.02	.58	1.04	
Participant Education (Education)	.02	.72	-.01	-.30	1.03	
Participant Annual Income (Income)	-.04	-1.13	-.12	-3.31***	1.06	
Confidence	.586	8.30***	.70	9.48***	4.31	
CON x FRQ_STAY	.084	1.69	-.005	-.09	2.12	
CON x FRQ_STAM	.078	1.82	-.04	-1.02	1.59	
CON x FRQ_OAY	.064	1.16	-.03	-.59	2.58	H7b supported
R^2	.483		.426			H8b supported
Model fit	$F = 59.90$***		$F = 47.57$***			
Adjusted R^2	.475		.417			
ΔR^2						

ΔR^2 means the increase in R^2 from the model to the previous model.
* $p < .05$, ** $p < .01$, *** $p < .001$.

Source: Author

Table 5-18 Results of hierarchical moderated regression analysis (Negative emotions and frequency as moderator)

Predictor Variables	Motivation (MO) Five-step hierarchical Regression analysis		Purchase Intention (Pint) Five-step hierarchical Regression analysis		VIF	Findings
	β	t	β	t		
Step 7: interactions						
Participant Gender (Gender)	-.03	-.66	.01	.28	1.06	
Participant Education (Education)	.01	.23	-.01	-.28	1.04	
Participant Annual Income (Income)	.10	2.18**	.007	.15	1.03	
Negative Emotions (NEmotions)	.07	.60	-.40	-3.25***	7.64	
NE x FRQ_STAY	-.06	-.76	.14	1.76	3.41	
NE x FRQ_STAM	.07	1.01	.36	4.92***	2.66	
NE x FRQ_OAY	-.05	-.65	.10	1.20	3.51	H7c rejected
R^2	.02		.07			H8c supported
Model fit	$F = 1.78$ †		$F = 5.24$***			
Adjusted R^2	.01		.06			
ΔR^2						

ΔR^2 means the increase in R^2 from the model to the previous model.
* $p < .05$, ** $p < .01$, *** $p < .001$.
† $p = .089$

Source: Author

Table 5-19 Results of hierarchical moderated regression analysis (PMB variable and frequency as moderator – Aggregate data)

Predictor Variables	Motivation (MO)		Purchase Intention (Pint)		VIF	Findings
	Five-step hierarchical Regression analysis		Five-step hierarchical Regression analysis			
	β	t	β	t		
Step 5: interactions						
Participant Gender (Gender)	-.05	-1.33	.004	.16	1.04	
Participant Education (Education)	-.005	-.11	-.01	-.66	1.04	
Participant Annual Income (Income)	.05	1.28	-.02	-.91	1.04	
Price Monetary Benefits (Price_MB)	1.05	9.59***	.72	10.03***	8.21	
PMB x FRQ_All	-.54	-4.94**	.12	1.67	8.21	H6 supported
R^2	.34		.71			
Model fit	$F = 47.04$***		$F = 221.23$***			
Adjusted R^2	.33		.70			
ΔR^2						

ΔR^2 means the increase in R^2 from the model to the previous model.
* $p < .05$, ** $p < .01$, *** $p < .001$.

Source: Author

Table 5-20 Results of hierarchical moderated regression analysis (Confidence variable and frequency as moderator – Aggregate data)

Predictor Variables	Motivation (MO)		Purchase Intention (Pint)		VIF	Findings
	Five-step hierarchical Regression analysis		Five-step hierarchical Regression analysis			
	β	t	β	t		
Step 6: Interactions						
Participant Gender (Gender)	-.04	-1.35	.008	.29	1.04	
Participant Education (Education)	.03	.97	.01	.40	1.02	
Participant Annual Income (Income)	-.02	-.82	-.04	-1.66	1.08	
Confidence	.65	15.41***	.28	8.91***	1.56	
CON x FRQ_All	.07	1.80	.64	20.27***	1.49	
R^2	.48		.69			
Model fit	$F = 83.80^{***}$		$F = 209.29^{***}$			
Adjusted R^2	.47		.69			
ΔR^2						

ΔR^2 means the increase in R^2 from the model to the previous model.
* $p < .05$, ** $p < .01$, *** $p < .001$.

Source: Author

Table 5-21 Results of hierarchical moderated regression analysis (Negative emotions variable and frequency as moderator – aggregate data)

Predictor Variables	Motivation (MO) Five-step hierarchical Regression analysis		Purchase Intention (Pint) Five-step hierarchical Regression analysis		VIF	Findings
	B	*t*	*B*	*t*		
Step 7: interactions						
Participant Gender (Gender)	-.04	-1.10	.008	.26	1.04	
Participant Education (Education)	.03	.75**	.01	.36	1.03	
Participant Annual Income (Income)	.11	2.75***	.01	.65	1.02	
Negative Emotions (NEmotions)	.12	2.92***	.04	1.65	1.04	
NE x FRQ_All	.46	10.99***	.81	28.59***	1.03	
R^2	.22		.648			
Model fit	*F* = 25.93***		*F* = 165.89***			
Adjusted R^2	.21		.644			
ΔR^2						

ΔR^2 means the increase in R^2 from the model to the previous model.
* p < .05, ** p < .01, *** p < .001.

Source: Author

5.8.1 Moderating Role of Frequency

In this research, the question regarding frequency of use of the NYOP model (FRQ) was established to test Hypothesis 7 and 8, which indicates that moderates the effects on motivation when using the NYOP model (MO) and the influence on consumer purchase intention (PInfluence) using the NYOP model. The moderating effects of frequency were tested through a multi group analysis process. Therefore, to verify the moderated effect of frequency the researcher used a split procedure to frequency several times a year (FRQ_STAY), frequency several times a month (FRQ_STAM) and frequency once a year (FRQ_OAY) (Table 5-16 to 5-18). Moreover, to understand if frequency had a significant and positive relationship with both motivation and consumer purchase intention, the researcher created another effect that includes the total frequency as aggregate data (FRQ_All) (Table 5-19 to Table 5-21).

The tests of Hypotheses 7a and 8a indicates frequency several times a year (FRQ_STAY), frequency several times a month (FRQ_STAM) and frequency once a year (FRQ_OAY) moderates the effects of price monetary benefits (Price_MB) on motivation ($\beta_{PMBFRQ\_STAY \to MO}$ = .23; p < .001), ($\beta_{PMBFRQ\_STAM \to MO}$ = .21; p < .001), and ($\beta_{PMBFRQ\_OAY \to MO}$ = .24; p < .001) respectively, and purchase intention ($\beta_{PMBFRQ\_STAY \to Pint}$ = -.03; p < .001), ($\beta_{PMBFRQ\_STAM \to Pint}$ = -.07; p < .001), and ($\beta_{PMBFRQ\_OAY \to Pint}$ = -.01; p < .001) respectively, supporting H7 and H8 (Table 5-16). Therefore, the results show that perceived price monetary benefits had a significant impact on consumer frequency on the use of the NYOP model on all three dimension of frequency. It indicates that

consumer satisfaction mediates the motivation to influence consumer purchase intentions through the NYOP model.

Hypotheses 7b and 8b posited that the effect of confidence in using the NYOP model is starting with the consumer frequency of use the NYOP model. Therefore, frequency moderates the effects of confidence to book using the NYOP model on motivation ($\beta_{CONFRQ\_STAY \to MO}$ = .084; $p < .001$), ($\beta_{CONFRQ\_STAM \to MO}$ = .078; $p < .001$), and ($\beta_{CONFRQ\_OAY \to MO}$ = .064; $p < .001$) respectively, and purchase intention ($\beta_{CONFRQ\_STAY \to Pint}$ = -.005; $p < .001$), ($\beta_{CONFRQ\_STAM \to Pint}$ = -.04; $p < .001$), and ($\beta_{CONFRQ\_OAY \to Pint}$ = -.03; $p < .001$) respectively, supporting H7b and H8b (Table 5-17). Nevertheless, the results show that when consumers are confident with the use of model, they will use the NYOP approach frequently. This consumer motivation further influences the consumer purchase intention to use the model more frequently.

With regard to the tests of Hypotheses 7c and 8c, this indicates that frequency several times a year (FRQ_STAY), frequency several times a month (FRQ_STAM) and frequency once a year (FRQ_OAY) does not moderate the effects of negative emotions (Price_MB) on motivation ($\beta_{NEmotionsFRQ\_STAY \to MO}$ = -.06; $p < .001$), ($\beta_{NEmotionsFRQ\_STAM \to MO}$ = .07; $p < .001$), and ($\beta_{NEmotionsFRQ\_OAY \to MO}$ = -.05; $p < .001$) respectively. However, the results show that this moderates significant the purchase intention ($\beta_{NEmotionsFRQ\_STAY \to Pint}$ = -.03; $p < .001$), ($\beta_{NEmotionsFRQ\_STAM \to Pint}$ = -.07; $p < .001$), and ($\beta_{NEmotionsFRQ\_OAY \to Pint}$ = -.01; $p < .001$) respectively, supporting H8c (Table 5-18). Therefore, the Hypothesis is partially supported. The Hypothesis was based on the assumption that the consumer will feel uncomfortable to use the NYOP model, hence will regret and feel less motivated. Although they are not motivated, the results suggest that

the consumer still has a significant purchase intention to use the model. This is understandable based on the assumption that the consumer using the NYOP model obtained substantial discounts that most consumers do not receive. Therefore, to the point the consumer is likely to gain positive advantages in a competitive environment, obtaining better prices using the NYOP model instead of booking through an Online Travel Agency based on another booking model and therefore, will continue to use the model.

As discussed in the previous section, two hypotheses (i.e. H5 and H7c) were statistically not significant and thereby they were rejected. In addition, the initial model was re-specified by removing the not significant paths and revised to provide a better data fit (i.e. H1, H3, and H4 were deleted). Moreover, a new path has been established as H9 to adjust the combined constructs SA, PB (H1 and H4) and support the model fit to the data. Table 5-22 presents the hypothesized relationships in summary.

Table 5-22 Initial hypotheses testing relationships

Construct	Code	Hypotheses	Hypothesized Relationships
Satisfaction	SA	H1	SA ➜ MO
Confidence	CO	H2	CO ➜ MO
Experience – Perceived self-efficacy	EXP	H3	EXP ➜ MO
Price Bargain – Monetary Benefits	PB	H4	PB ➜ MO
Negative Emotions	SANE	H5	SANE ➜ MO
Motivation	MO	H6	MO ➜ INT
Frequency	FRQ	H7a,b,c	FRQ ➜ MO
		H8a,b,c	FRQ ➜ INT
Price Monetary Benefits		H9	PMB ➜ MO

Source: Author

5.8.2 Frequency Group Comparisons

Moreover, in order to compare the results and test the effect of the moderator frequency after completing the split procedure analysis, the researcher created another interaction that included the total frequency as aggregate data (FRQ_All) (Table 5-19 to Table 5-21). Comparison groups assessed the moderating effect of frequency on the impact of consumer motivation to use the NYOP model, which influences purchase intention to book a hotel room. The results shown that the finding contradicted frequency split by periods that reported no significance between negative emotions and motivation and purchase intention to general frequency that reported significance between all variables, indicating the moderating effect of frequency.

Comparison group one result indicated that frequency (FRQ_All) moderates the effects of price monetary benefits (Price_MB) on motivation ($\beta_{\text{PBMFRQ\_All} \rightarrow \text{MO}}$ = -.54; p < .001), and consumer purchase intention ($\beta_{\text{PBMFRQ\_All} \rightarrow \text{Pint}}$ = .12; p < .001) (Table 5-19). Thus, this prediction was supported as consumers demonstrate positive motivation, which influences purchase intention because of the perceived price monetary benefits. The impact of perceived price monetary benefits generates the frequent use of the NYOP model. These results support Hypothesis 6.

Comparison group two results addressed that frequency (FRQ_All) moderates the effects of confidence (CON) on motivation ($\beta_{\text{CONFRQ\_All} \rightarrow \text{MO}}$ = .07; p < .001), and consumer purchase intention ($\beta_{\text{CONFRQ\_All} \rightarrow \text{Pint}}$ = .64; p < .001) (Table 5-20). The results indicated significant relationships between frequency and confidence between consumer motivation and purchase intention to use the

NYOP model. This direct impact of confidence is perceived because consumers are confident on expectations when using the NYOP model.

Finally, comparison group three results reported that frequency (FRQ_All) moderates the effects of negative emotions (NEmotions) on motivation ($\beta_{\text{NEmotionsFRQ\_All} \rightarrow \text{MO}}$ = .46; *p* < .001), and consumer purchase intention ($\beta_{\text{NEmotionsFRQ\_All} \rightarrow \text{Pint}}$ = .81; *p* < .001), (Table 5-21). Although the results of the initial interaction (Table 5-18) indicated a partially significant impact, this interaction contradicted and demonstrated positive and significant relationships between frequency and motivation and purchase intention, which estimated high scores. This means, that regardless of the fact that consumers will feel uncertain when using the NYOP approach due to several restrictions, the results indicated that the model use is mainly due to the price bargaining power. The results of the analysis indicated there was a significant relationship between negative emotions (NE) and frequency (FRQ_All). However, the construct negative emotions (NE) and frequency were separated in to different periods of use and was not significant. A summary of frequency groups is compared in Table 5-23.

Table 5-23 Negative Emotions - Frequency results comparisons model

Predictor Variables	Motivation (MO)		Purchase Intention (Pint)		VIF
	β	*t*	*β*	*t*	
Interactions					
NE x FRQ_STAY	-.06	-.76	.14	1.76	3.41
NE x FRQ_STAM	.07	1.01	.36	4.92	2.66
NE x FRQ_OAY	-.05	-.65	.10	1.20	3.51
NE x FRQ_All	.46	10.99***	.81	28.59***	1.03

* *p* < .05, ** *p* < .01, *** *p* < .001.Source: Author

5.9 **Summary**

This study examined the process by which consumers perception to price bargain form a motivation towards a purchase intention to book a hotel room through the NYOP model. The main purpose was to provide a better understanding of a consumer's motivation to willingness to pay (WTP). The researcher aimed to: (a) examine the consumer's behavioural intentions on their willingness to pay (WTP) whilst using the NYOP method to book a hotel room; (b) examine the extent of different perceptions, using the NYOP model, its influence on consumers' overall satisfaction and confidence when they purchase travel products. Examine how price factors, reference prices, and the number of bids reflect on utilizing the NYOP model; (c) examine whether or not the availability of posted reference prices impacts a consumer's booking pattern when using the NYOP model. Therefore, the researcher developed and empirically examined a hypothesised model. We have hypothesised that these key antecedents would be more pronounced under certain dynamic relationships.

More specifically, the findings addressed how consumers' perceived price monetary benefits influences consumers' motivation, which is an important determinant to consumers' purchase intentions. Moreover, consumers' confidence influenced motivation and purchase intention to book a hotel room. Motivation worked as a mediating variable towards consumer purchase influence. In addition, the researcher examined the impact of negative emotions construct and the outcome to motivate the consumer before making a purchase. The results also show that control variables gender, education, and annual income revealed differences in regard to their intent and motivation. Frequency worked as a moderator, which has a direct impact on consumer motivation and

purchase intention. Various statistical tests provided insights about the effect of the constructs on consumers' willingness to pay (WTP) when using the NYOP model. The demographic presented that the NYOP model is mainly known in USA, which is expected as priceline.com firstly pioneered the model in the USA. Furthermore, it is not appropriate for Europe, mainly because of the restrictions as the confirmed reservation is not refundable and not changeable. However, in practice this is not as exact. Currently, in the hospitality practice almost every online travel agency provides one of the alternatives to book a hotel room to similar restrictions.

Firstly, the study shows that perceived price monetary benefits positively influences consumers in terms of both motivation and purchase intention to use the NYOP model to book a hotel room. Some of the results support prior research (Nagle and Holden, 2002; Talluri and van Ryzin, 2004), and also provides new insights to how the cognitive component price monetary benefits correlate independently with consumer characteristics and variables (Table 5-15). However, the results are also in contrary to the findings of the work of Huang and Sosic (2009) who found that high-end consumers might demonstrate low-end behaviour. In practice, using a bidding model (WTP) this argument is not applicable and cannot directly influence the WTP due to uncertainty over confirmation details and restrictions on cancellation policies the NYOP model creates. Therefore, these results are reminiscent of the previous work and hospitality managers should take into consideration, when developing pricing strategies, the consumer's perception of price before accepting their offer through the NYOP model.

Secondly, with respect to consumer confidence that represented the cognitive component and the consumers' comfort with using the NYOP model, it can be

derived that this influences motivation and effectively purchase intentions to book a hotel room. The results indicated a significant positive relationship with both consumer motivation and consumer purchase intention. The findings provide insights that consumers feel confident using the model because the confirmed price was according to their WTP. Moreover, the confirmed price was lower than was expected. Similar to Talluri and van Ryzin (2004) who found that a consumer confirms the reservation only if they feel the offered price is according to his WTP.

Thirdly, the current study provides useful insights into understanding how significant negative emotions are when using the NYOP model. These findings show that the negative emotions construct did not show a significant relationship with consumers' motivation ($p > .01$), which at the end influences the consumer's purchase intention to use the model and book a hotel room. Consumers feel uncomfortable when using a bidding process and the correlation analyses revealed that the negative outcome was lower on consumer purchase intention using the NYOP model than on consumer motivation. Since the consumer has to bid the willingness to pay (WTP), they feel regret from a negative outcome. The model is based on uncertainty; hence, consumers evaluate the outcome based on their potential gain or losses compared to a reference point (Table 5-15). Finally, consumer expectations towards a purchasing deal may increase their emotions, which encourage their purchase intention.

Motivation was hypothesised as a mediator and then influenced consumer purchase intention. The results have shown that motivation mediated consumer perceived price monetary benefits, confidence, and partially mediated negative emotions. This explains how motivation is influenced by consumers' variables.

The results also demonstrated that differences existed in consumers' frequency behaviour using the NYOP model. Specifically, negative emotions were not always significant when frequency was separated to different periods of use.

6 REVENUE MANAGEMENT AND PRICING – HOTEL INDUSTRY

"The three most common ways of pricing are cost plus, competitive rates and historical rates adjusted for inflation. Cost plus means you don't know how to price; competitive rates means you don't know how to price but your competitors do; adjusting historical rates means you don't know how to price but someone once did" (Anon.)

6.1   Introduction

This chapter discusses the second study results of the implementation of revenue management levels in hotels. Following the literature review and methodology, this chapter provides the quantitative analysis of the study. Hotels are using revenue management and pricing to increase profit by managing supply and demand. The reasoning behind revenue management implementation has changed for the hotel industry due to the multichannel environment. Therefore, hotel revenue managers should take into account the effect of several factors that challenge revenue management. Their goal is to improve profitability, by managing effectively except of capacity, as well as the effects of different pricing methods, competition, market segmentation, distribution channels, and the rise of social media.

The analysis of the results' aim to examine the fourth objective concerning the extent and the use of revenue management and dynamic pricing methodologies and their success in the hospitality industry, as well as their behaviour towards the RM framework, objective five investigating the impact of dynamic pricing mechanisms used in hotels to model consumer behaviour, and to create pricing strategies related to target market segmentation, and objective six with reference the pricing methods used to influence consumers when purchasing a travel product through OTAs. The analysis' goal is it to provide an answer to the

following objective questions: 'how do hotel revenue management and pricing decisions impact consumers' booking patterns?', 'Do hotels take into account the effect of dynamic pricing?', and 'how do the companies apply dynamic pricing?'

Section 6.2, following the research framework, explains the revenue management implementation used at the operational level in hotels and how decisions are made to offer availability to the consumer. In Section 6.3, the researcher recapitulates and describes the information concerning the respondent's profile. Moreover, a nonresponse bias test was conducted, using the method proposed by Armstrong and Overton (1977). Following this Section 6.4 presents the complete demographic profile of the respondents. Section 6.5 then discusses the descriptive statistics of the data that is used to summarise and describe the hotel sample data in this research. This chapter continues with the validation of the hotel survey measurement model as found in section 6.6, followed by the analysis of reliability and validity in 6.6.1 using different tests for unidimensionality, reliability, and discriminant validity, to ensure that the scale is confirming the measurement concepts. Then, the researcher presents the first analysis, the exploratory factor analysis (EFA) that supports the model fit employed, and an analysis of the constructs, the confirmatory factor analysis (CFA) to validate the initial measurement model. Moreover, to further validate the constructs, a Harman's one factor test was conducted because of a potential problem concerning the main sources of the collected data for the constructs that is common method bias. The chapter proceeds to an analysis of the studys' results, highlighting the employed techniques, followed by a further discussion in section 6.7. The researcher performed multiple regression

analyses with hierarchical methods of entry to test certain relationships. Finally, section 6.8 is a chapter summary, presenting the chapter conclusion.

6.2   Revenue Management and Pricing Application in Hotels

Revenue management is a scientific technique that focuses on improving company's profitability through the sale of perishable inventory. The hotel industry has used revenue management since 1995, when Marriott Corporation adapted the concept of 'Yield Management' from the airlines industry to hotels. Dynamic pricing is a method of revenue management to increase revenue, charging different prices for the same product.

Companies adopted various revenue management techniques, focusing on offering differentiated pricing, based on different consumers' willingness to pay (WTP) and product differentiation, charging different prices for products with same characteristics. Therefore, revenue management refers to strategies and tactics that apply price discrimination policies. Moreover, today, revenue managers should consider the technological innovation and the increasing importance of the use of social media and mobile channels. This indicates that, through social media channels, an emphasis is placed on the revenue manager's ability to move from price-sensitivity towards purchasing behaviour of consumer convenience and availability. In general, when discussing pricing strategies, we should reflect on the '3 Cs' of pricing: costs, consumers, and competition (Nagle and Holden, 2002).

Revenue management strategy is divided into two levels: the tactical and the operational level (Bitran and Mondschein, 1995; Phillips, 2005:123; Talluri and

van Ryzin, 2004). The operational level addresses a quantity-based revenue management approach, in which segments the quantity of hotel rooms sold by market, consumer type, and room type. The hotel inventory is perfectly flexible between segments however, at the same time, the room supply offered accepts a maximum number of reservations. Moreover, room category fences support it in a tactical way, to make the room allocation profitable.

This quantity-based RM is closely related to the second approach, namely, the price-based revenue management approach that resembles dynamic pricing. Hence, the companies have more flexibility. Hotels can continually change prices over various consumer groups, taking into consideration the supply and demand over a period of time. This achieves the same quantity of sales or it reduces sales in relation to the hotel occupancy and the expected demand. However, this is done in a more profitable approach because the adjusted prices have, at the same time, been set to maximize revenue. It maximises economic wealth through dynamically forecasting consumer demand (Cross, 1997:51).

According to Nagle and Holden (2002:9), pricing is an art and a science and 'it depends as much on good judgement as on precise calculation'. Understanding how prices are set, communicated, and updated in a particular industry is a fundamental pre-condition for modeling the pricing process within the industry or prescribing approaches for improving pricing. The main factors that influence the hotel pricing strategies refer to a correlation between consumer willingness to pay, market segment, hotel products, competition, and seasonality (time of day, day of the week, period of the year) (Cross, 1997:50).

Market segmentation is one of the key elements and the first step for successful revenue management implementation in the hotel industry. In today's competitive environment, including online marketing the critical objective is to understand who is buying the product, based on observed characteristics and classifying them into groups (Talluri and van Ryzin, 2004; Cross, 1997; Phillips, 2005). The objective of RM is to determine the consumer's behaviour at a certain moment because consumers do not equal consume. They will also capture the opportunity to maximise revenue that can be obtained.

In doing so, revenue management generally follows four steps: (a) data collection, (b) estimation and forecasting, (c) optimization, and (d) inventory – distribution channels control (Talluri and van Ryzin, 2005:18). The RM tools enable the hotel management to make accurate predictions to reduce uncertainty and make decisions to achieve the expected profitability.

Figure 6-1 presents the process in a RM system used in the hospitality industry.

Figure 6-1 Schematic overview of a typical RM system
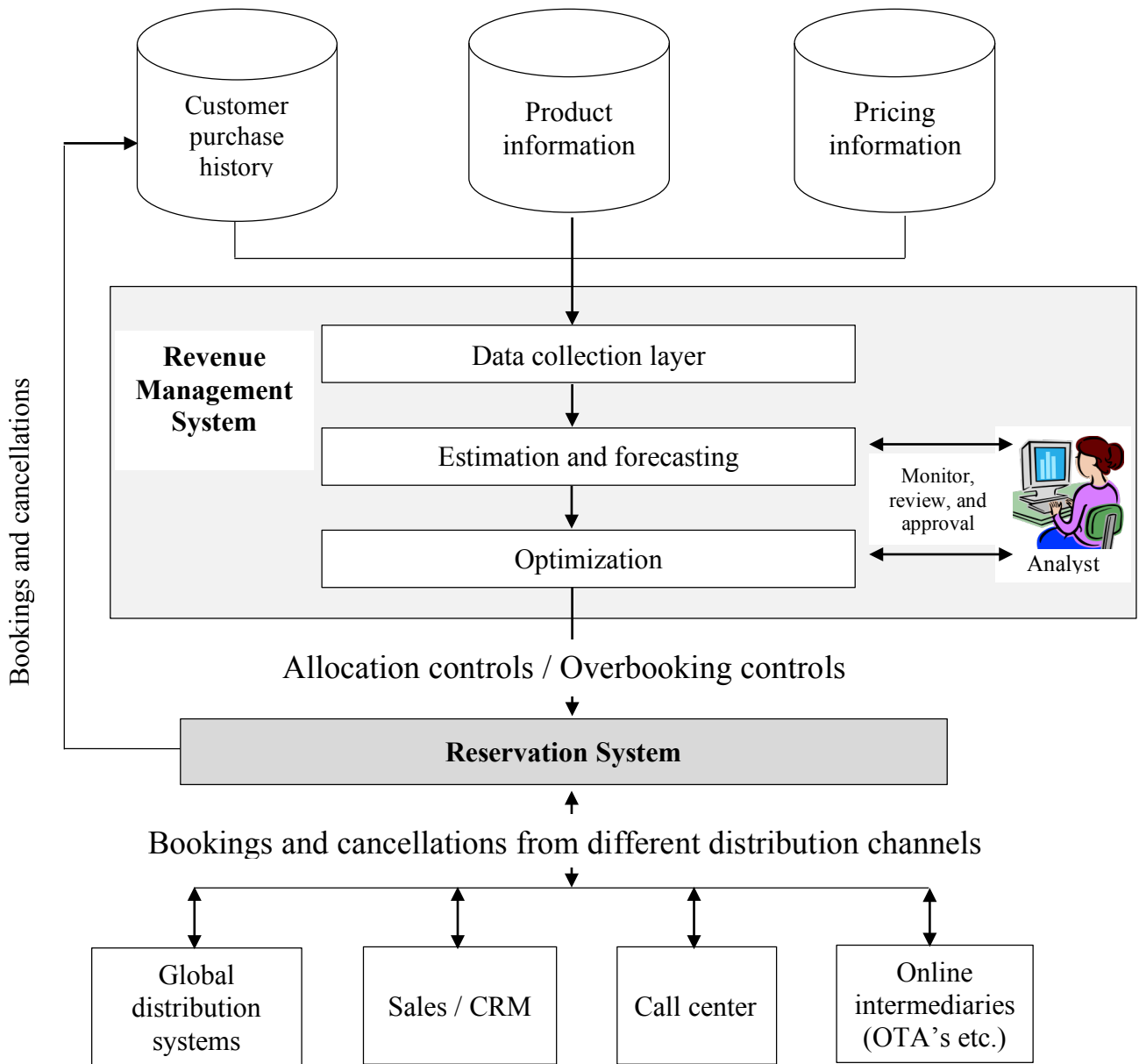
Source: Talluri and Van Ryzin (2005) Figure 1.2 and Phillips (2005) Figure 6.3.

6.3   Hotel Sample and Study Analysis

This section provides general information about participant's sample and response rate achieved.

6.3.1 Sample and Response Rate

Approximately 140 hotel properties located in different regions were invited to participate in this research study. Geographically, the main population included hotels in Europe. The data was collected via a web-based survey questionnaire. Although the researcher has worked in the tourism industry for several years, it was difficult to access and establish affiliations with the specific sampling frame in order to recruit. Therefore, the data collection involved soliciting participation from industry colleagues who worked in targeted hotels. The study was focused on hotel executives that hold a managerial position and managers with a direct influence on revenue management and pricing decisions. Consequently, using the snowball referral sampling method, once the initial connections were exhausted, the researcher enlarged the survey by requesting the participants to identify other participants, utilizing 'mutual relationships' or 'social networks' in the population.

In this study, a total of 105 questionnaires were collected. The collected data was screened, to control the response bias, in order to reduce the sampling error. After screening the data, 29 responses of the returned questionnaires were identified as not fully completed. Responses that included one or more unanswered sections were removed. A number of respondents replied via email, explaining their refusal to contribute. They were hesitant to disclose information because of business policies, confidentiality purposes, lack of time, and work pressure. Finally, in aggregate, 76 (72.38%) questionnaires were kept and included for further data analysis.

To control the collected data of the questionnaires received, an analysis for nonresponse bias was conducted (Babbie, 1990:180). The data was tested,

using the method proposed by Armstrong and Overton (1977). The researcher compared the data on demographic characteristics and the property profiles as gender, age, hotel category, revenue management responsibilities from the first 19 respondents (approximately 25%) to the one of the last 19 respondents. The analysis of variance (ANOVA) was used to compare the mean value of the characteristics and to estimate the response bias. The results in Table 6-1 illustrate that there were no significant differences between the two groups of early and late respondents with p values being greater than .05. These results indicate that the probability of a nonresponse bias is limited.

Table 6-1 Response bias analysis

Sample Characteristics	Mean (first 19)	Mean (last 19)	ANOVA F	P
Gender	5.2895	5.1908	.133	.718
Age	5.8684	6.1645	.51	.822
Hotel category	5.1491	5.6579	.007	.935
RM responsible	6.1645	5.8684	.051	.822

Source: Author

6.4   Demographic characteristics of respondents

A total of 76 usable questionnaires were comprised for further analysis. Table 6-2 presents the complete demographic profiles of the respondents regarding their age, gender, education, and the discipline of education. In addition to the demographic characteristics, the table provides information regarding the participants' position in the hotel property, the hotel location, and the years of working for the hotel company.

In this study, Table 6-2 shows that the number of respondents reported an equal split between male 50 per cent (38) participants, and female respondents account for the other half 50 per cent (38). Among the participants, the majority 57.9 per cent (44) was between 31 and 40 years old, followed by 23.7 per cent (18) ranging from 41 to 50 years in age. Fewer participants 13.2 per cent (10) ranged between 18 and 30 years old. The remaining few, approximately 5.3 per cent (4), were 51 years or older. In addition, Table 6-2 indicates that the majority of the respondents were middle aged (31 – 50 years old).

In terms of education, the representative profile of the respondents reported that the majority, namely 43.4 per cent (23) held a Bachelor's degree and has completed a university undergraduate degree. The second group of participants holds a Master's degree or higher (MSc or MBA). This group is represented by 38.1 per cent (29). 1.3 per cent (1) has a PhD. Furthermore, 13.2 per cent (10) of the respondents held a College Diploma and finally, 3.9 per cent (3) have completed a secondary school education. The results of this study show that 82.8 per cent of the respondents have completed some level of university studies (BA, MSc, MBA or Ph.D.).

With respect to educational discipline, the majority of respondents were graduates of an academic degree with a focus on hospitality and tourism

courses, namely 68.4 per cent (52), followed by graduates from the field of business administration to 25.0 per cent (19). Among the respondents, 5.3 per cent (4) have completed an accounting and finance specialization, and, finally, 1.3 per cent (1) has earned an operational research or engineering degree. These findings can lead us to conclude that this industry prefers hospitality courses graduates. However, in practice, these findings are not exactly applicable because, for the hotel companies, a graduate degree in hospitality has never been important, although it is an important asset for the employees to distinguish themselves among their colleagues. According to Elizabeth Barber, associate dean of Temple University's School of Tourism and Hospitality Management, US "Hotel companies don't necessarily embrace graduate education" (Peltier, 2014).

Out of the total of 76 respondents who participated in this research, 94.7 per cent (72) were located in Europe and 5.3 per cent (4) in Asia. The first screening of the aggregate data among the participants also showed properties located in the United States. However, these questionnaires were not fully completed or showed partially unanswered sections. Therefore, they were removed.

In terms of years working for the same company, approximately 34.2 per cent (26) of the respondents have been with the same company for somewhere between 5 to 10 years, whilst another 30.3 per cent (23) have been with the company for between 2 and 5 years. Moreover, a great number of respondents, namely 23.7 per cent (18) have been with the company for over 10 years. Finally, 11.8 per cent (9 respondents) have been with the company for under a year. These findings show that most of the employees (57.9 per cent) have a

long tenure with the company. This indicates a job satisfaction, which creates a positive relationship.

Table 6-2 Demographic characteristics of respondents' profiles

Demographic Characteristics and Activities	Frequency	Percent
Gender (n=76)		
Female	38	50.0
Male	38	50.0
Age (n=76)		
18y - 30 years old	10	13.2
31y - 40y	44	57.9
41y - 50y	18	23.7
51y or older	4	5.3
Education (n=76)		
Secondary School	3	3.9
College Diploma	10	13.2
Bachelor's Degree	33	43.4
Master's Degree	21	27.6
MBA	8	10.5
Ph.D. or equivalent	1	1.3
Discipline of Education (n=76)		
Business Administration	19	25.0
Hospitality and Tourism	52	68.4
Accounting or Finance	4	5.3
OR / Engineering	1	1.3
Position in Hotel Property (n=76)		
CEO, Managing Director	12	15.8
Division Director	7	9.2
Department Director	21	27.6
Department Manager	28	36.8
Revenue Manager - Analyst	8	10.5
Region of Hotel Location (n=76)		
Europe	72	94.7
Asia	4	5.3
Years Working with the Company (n=76)		
Less than a year	2	2.6
One year	7	9.2
2 to 5 years	23	30.3
5 to 10 years	26	34.2
More than 10 years	18	23.7

Source: Author

Since this study is focused on the hotel industry, it has given the researcher an opportunity to investigate about the hotel workforce in terms of the relationship between gender and the corresponding positions. The hospitality industry is a highly labour intensive industry (Guilding, 2014:7). Therefore, the workforce is a key significant for a sustainable, competitive advantage in an increasingly competitive environment. Previous research has shown absence of women in the highest level of managerial positions. Although the hotel sector reports a hotel workforce dominated by women, with an average of 55.5%, its management is still mostly run by men (Marinakou, 2014). Furthermore, Kinnaird and Hall (1996) argue that the hospitality industry is influenced by gender stereotyping and sex segregation. This is shown by men and women being recruited for different types of work and positions. Those positions represent their primary traditional responsibilities and abilities. According to Walker (2011), women occupy only 12% of UK companies' directorships and that percentage drops to just 6% in the hospitality sector. This is noteworthy because research indicates that hotels that have women climb the management ladder are more successful in facing the increasing competitiveness, and in driving innovation. They also adapt more efficiently to changes (Marinakou, 2014).

Furthermore, this research shows that, unlike the above mentioned, women are found in high managerial positions in the hotel operation; however, not in top positions (Table 6-3). We found that 36.9 per cent (14) of the female respondents occupy a department director or division director position equal to their male colleagues. Moreover, this research shows that 50 per cent (19) of the females hold a department manager position; unlike their male colleagues of which only 23.7 per cent (9) occupy one such. Finally, there are certain

positions that are dominated by men. Hence, only 5.3 per cent (2) of the women hold a managing director position; in contrast to their male colleagues, with a percentage of 26.3 (10) positions.

Table 6-3 The Relationship between the company and workforce positions

		Which of the following categories is close to your job?					
		CEO, Managing Director	Division Director	Dpt. Director	Dpt. Manager	Revenue Manager - Analyst	Total
Female	Count	**2**	**2**	**12**	**19**	**3**	**38**
	Percentage (%)	5.3%	5.3%	31.6%	50.0%	7.9%	100.0%
	Which of the following categories is close to your job?	16.7%	28.6%	57.1%	67.9%	37.5%	50.0%
	% of Total	2.6%	2.6%	15.8%	25.0%	3.9%	50.0%
Male	Count	**10**	**5**	**9**	**9**	**5**	**38**
	Percentage (%)	26.3%	13.2%	23.7%	23.7%	13.2%	100.0%
	Which of the following categories is close to your job?	83.3%	71.4%	42.9%	32.1%	62.5%	50.0%
	% of Total	13.2%	6.6%	11.8%	11.8%	6.6%	50.0%
Total	**Count**	**12**	**7**	**21**	**28**	**8**	**76**
	Please tell me about your self. Are you?	15.8%	9.2%	27.6%	36.8%	10.5%	100.0%
	Which of the following categories is close to your job?	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	% of Total	**15.8%**	**9.2%**	**27.6%**	**36.8%**	**10.5%**	**100.0%**

Source: Author

Consequently, the 'People 1st' report (2010), related to women working in hospitality, leisure, travel, and tourism, indicated that men and women follow the same pattern of progression into managerial positions until the age of 25 years. However, between the age of 25 and 45, the pattern looks very different, with fewer women found in these positions. This study confirms the above report. The study shows that between the age of 18 to 30, men and women follow almost a similar pattern. However, between the age ranges of 31 to 40 years, men occupy higher managerial positions than women (Table 6-4).

Table 6-4 The Relationship between Gender, Age and Job Position

Gender	Age	Statistics	Managing Director	Division Director	Dpt. Director	Dpt. Manager	RM Analyst	Total
Female	18y-30y	Count	0	0	0	6	0	6
		%	0.0%	0.0%	0.0%	31.6%	0.0%	15.8%
	31y-40y	Count	2	1	6	10	3	22
		%	100.0%	50.0%	50.0%	52.6%	100.0%	57.9%
	41y-50y	Count	0	1	6	2	0	9
		%	0.0%	50.0%	50.0%	10.5%	0.0%	23.7%
	51y +	Count	0	0	0	1	0	1
		%	0.0%	0.0%	0.0%	5.3%	0.0%	2.6%
Male	18y-30y	Count	0	1	1	1	1	4
		%	0.0%	20.0%	11.1%	11.1%	20.0%	10.5%
	31y-40y	Count	5	2	6	5	4	22
		%	50.0%	40.0%	66.7%	55.6%	80.0%	57.9%
	41y-50y	Count	4	1	2	2	0	9
		%	40.0%	20.0%	22.2%	22.2%	0.0%	23.7%
	51y +	Count	1	1	0	1	0	3
		%	10.0%	20.0%	0.0%	11.1%	0.0%	7.9%

Above the table columns: **Which of the following categories is close to your job?**

Source: Author

6.4.1 Respondents properties profile

The survey was dispatched in the hotel sector to private owned and branded properties. As expected the number of responses (Table 6-5) indicates that most of the responses received are from branded (56.6 per cent (43)), and higher category (28.9 per cent (22)) hotels. This reflects the researcher's opinion that the responses are mainly from those who recognise the critical impact of revenue management. Furthermore, they are more proactive as they have to reinforce the hotel's performance and contribute to driving revenues and continually maximising profitability. Because of the growing number of distribution channels, the complicated rate structures, consumer segmentation approaches, and the competition, it is in a company's best interest to ensure that they implement revenue management principles. Therefore, in the current competitive hotel environment, higher-level service properties and branded properties have a resource of dedicated specialists who focus on optimizing the potential revenue, as full service properties profit more from a revenue management's impact than limited service properties.

Table 6-5 Respondents - Property Profile

Respondents – Property Profile	Frequency	Percent
Property profile (n=76)		
I work in an private owned hotel (1 - 2 star)	1	1.3
I work in an private owned hotel (3 star)	10	13.2
I work in an private owned hotel (4 star)	14	18.4
I work in an private owned hotel (5 star)	8	10.5
I work in a hotel corporate owned by a small to mid-sized hotel chain (5-15 hotels)	10	13.2
I work in a hotel corporate owned by a mid to large-sized hotel group/chain (15+ hotels)	33	43.4

Source: Author

The findings above are consistent with the results in Table 6-6, which identified that revenue management is practiced. Furthermore, 60.5 per cent (46) properties identified that they have a revenue manager, which 80.5 per cent (37) belong to higher service level (5 star or branded properties). Additionally, 22.4 per cent (17 properties) mentioned that the hotel general manager is responsible for the hotel pricing strategy. When reading through the results closely, it can be identified that this mainly applies to low star properties (1 – 4 stars), represented by 52.9 per cent (9 properties).

Table 6-6 Respondent property - RM responsibility

Who is responsible for the day-to-day Revenue Management strategies at your hotel?

(n=76)	Frequency	Percent
Revenue Manager - Analyst	46	60.5
Hotel General Manager	17	22.4
Front Office Reception	1	1.3
Reservation Manager	7	9.2
Rooms Division Manager	2	2.6
Head Office	3	3.9

Who is responsible for the day-to-day RM strategies at your hotel?		Which of the following applies to you?						Total
		Private property / category				Chain/hotels		
		(1-2*)	(3*)	(4*)	(5*)	(5-15)	(15+)	
Revenue Manager	Count	0	1	8	**5**	5	**27**	46
	%	0.0%	2.2%	17.4%	**10.9%**	10.9%	**58.7%**	100.0%
Hotel GM	Count	**1**	**5**	3	1	3	4	17
	%	**5.9%**	**29.4%**	**17.6%**	5.9%	17.6%	23.5%	100.0%
Front Office - Reception	Count	0	0	0	0	0	1	1
	%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
Reservation Manager	Count	0	2	2	1	1	1	7
	%	0.0%	28.6%	28.6%	14.3%	14.3%	14.3%	100.0%
Rooms Division Manager	Count	0	1	1	0	0	0	2
	%	0.0%	50.0%	50.0%	0.0%	0.0%	0.0%	100.0%
Head Office	Count	0	1	0	1	1	0	3
	%	0.0%	33.3%	0.0%	33.3%	33.3%	0.0%	100.0%

6.5 Descriptive statistics

Descriptive statistics are used to summarise and describe the sample data in research. The numbers provide summaries of the samples and the measures we are concerned with. They are used to depict in a simple manner what the data shows. The most commonly used method of describing the central tendency, that is an estimate of the center of the distribution of values is the mean. The standard deviation describes how spread out the data is. The standard deviation is the most commonly used method to describe the range of variation, as is the square root of the variance.

'Opaque selling' is a distribution channel pricing strategy, through which a company can guarantee service specifications while hiding the product from the consumer until after the purchase is completed. Several online travel agencies, such as Priceline and Hotwire, cruise companies such as Norwegian Cruise Lines, or airlines, such as Germanwings, sell travel products through an opaque selling channel. This study demonstrates that 36.8 per cent of the respondent properties are using a type of opaque (Table 6-7).

Table 6-7 Opaque Distribution Channel usage in Hotels

Are your hotels using any opaque distribution channels such as Priceline.com?

		Frequency	**Percent**
Valid	Yes	28	36.8
	No	48	63.2
	Total	76	100.0

Source: Author

These findings are interesting because opaque selling, as a third party reservation provider, is associated with higher distribution costs up to 46 per cent ($46). When selling a room for a $100 rate per night, for example, the distribution costs, the cost to acquire will be up to $46 (AH&LA and STR, 2012). This is an important factor to hotel profit margins. The online travel agencies as a distribution channel are selling the rooms for a lower price than the hotel branded website in direct competition with the hotel, which guarantees the lowest prices will be available on their websites. In addition, hotel chains do not provide reward points to consumers purchasing a room through a distribution channel, unlike through their branded websites. Therefore, the controversial question is how hotels are able to sustain pricing control that is not undercutting their profits while selling through opaque distribution channels.

Currently, in market terms, due to strategic acquisitions, the hotel industry is threatened by an OTA duopoly with Priceline, controlling 62% of the European market, whilst Expedia holds around 70% of the US market (Barthel and Perret, 2015). Moreover, another new online player is threatening the hotel business model through online home sharing: Airbnb. Because of the rising competition from online travel agencies, properties are not effectively optimizing the breakdown of the distribution channels. Properties' distribution channels strategies should put an emphasis on the identification of ways in order to shift the channels to leverage the best conversion of cost and potential revenue. Several hotel chains, such as Accor Hotels, Ritz Carlton, or IHG decided to develop their own online distribution channel. This path is important in order to undercut the commission fees and to capture a greater market share, using only the most profitable reservation channels, thus gaining control over profit

margins. However, it is essential that hotels combine inventory sales and costs following a flexible sales mix distribution strategy. Therefore, over the past few years, hotels have begun promoting their products using the opaque pricing approach. The mechanism has become popular, as it allows hotels to sell the distressed inventory at a higher or at a discount price, whilst keeping the identity of the product hidden, without compromising sales from the other distribution channels.

This research shows that the majority of the respondents' 63.2 per cent or 48 properties are not selling their inventory through an opaque pricing mechanism (Table 6-8). In practice, this was expected, due to the high associated distribution cost. Managing distribution channel costs is a key priority for hotels to maintain a consistent competitive price and to achieve a higher average daily rate (ADR) yield. Opaque distribution channels are associated with the highest distribution costs of up to 46 per cent, or $46 when a hotel sells a room for $100 per night through an opaque provider (AH&LA and STR, 2012). Therefore, because of the high distribution cost and the low offered prices, due to last minute discounts, this is harmful to hotels as it 'starts a cycle of price degradation' (Jerath, Netessine, and Veeraraghavan, 2009). Fay and Xie (2008) similarly argue that the advantage of the opaque relates to the extent of travel costs.

However, some researchers in the academic literature argue that opaque selling helps hotels to reach consumers, who are not willing to pay the price listed on the hotel's website because the posted prices it might be too high (Anderson and Xie, 2014). In addition, Shapiro and Shi (2008) discuss that opaque selling distribution channels enable providers to profit from the

discrimination existing between consumers who are sensitive to price or service and those who are not.

A further analysis of the data provides an understanding of which hotel categories successfully implemented the opaque selling approach. Unexpectedly, in contradiction to the above discussion, the opaque selling mechanism is most popular 57.14 per cent (16 properties) among the chain hotels and higher categories. It can be argued that the independent properties need to sell the distressed inventory to a range of distribution channels to remain competitive with the chain hotels. Therefore, it is important to promote their hotel inventory also through the opaque selling mechanism to maximise sales.

Table 6-8 Opaque distribution channels usage by hotel categories

Are your hotels using any opaque distribution channels such as Priceline.com?

		Which of the following applies to you?						
		Private property / category				Chain/ number of hotels		
		(1-2*)	(3*)	(4*)	(5*)	(5-15)	(15+)	Total
Yes	Count	0	5	7	3	2	11	28
	%	0.0%	50.0%	50.0%	37.5%	20.0%	33.3%	36.8%
No	Count	1	5	7	5	8	22	48
	%	100.0%	50.0%	50.0%	62.5%	80.0%	66.7%	63.2%
Total	Count	1	10	14	8	10	33	76
	%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	% of Total	1.3%	13.2%	18.4%	10.5%	13.2%	43.4%	100.0%

Source: Author

In addition, to Table 6-8, the researcher illustrates the descriptive statistics of the hotel pricing approaches survey constructs in Table 6-9. For each measuring item the researcher reports the mean, the standard deviation (SD), the minimum, and the maximum. The use of descriptive statistics provides an understanding of the variation of each item for the presented data and constructs in this model. The constructs were revenue management key factors, pricing approaches, market segmentation, competition, distribution channels, social media, dynamic pricing, and the usage of the NYOP pricing model.

Table 6-9 Descriptive Statistics for all items used to measure model constructs

Item	Measurement Items	Min.	Max.	Mean	SD
	Please indicate the importance of the following essential key functions of revenue management.				
RM Revenue management					
RM001	Forecasting Demand	3	7	6.30	.712
RM002	Price Management	3	7	6.38	.765
RM003	Capacity Management	4	7	6.17	.737
RM004	Market Segmentation	1	7	5.89	1.027
RM005	Market Positioning	4	7	6.05	.831
RM006	Distribution Channel Management	3	7	5.93	.869
RM007	Is the revenue manager's performance directly measured through RM metrics (ADR, RevPAR etc.)?	1	7	5.84	1.155
RM008	Is the hotel manager performance connected to RM metrics (ADR, RevPAR etc.)?	2	7	5.51	1.183
RM009	Is the sales manager performance connected to RM metrics (ADR, RevPAR etc.)?	2	7	5.76	1.044
PR Pricing					
PR001	PR - Cost-based pricing	1	7	5.05	1.326
PR002	PR - Inventory-based pricing	3	7	5.58	.853
PR003	PR - Customer-centric pricing	2	7	5.22	1.218
PR004	PR - Competitors-based pricing	1	7	5.66	.974
PR005	PR - Bid price	1	7	4.34	1.629
MS Market segmentation					
MS001	We promote the hotel differently to various groups of consumers.	1	7	5.55	1.360
MS002	We divide consumers into groups based on similar or same buying characteristics.	2	7	5.74	1.063
MS003	We group consumers and focus on understanding their needs.	2	7	5.95	1.005
MS004	We understand the consumer target markets of our competitors.	2	7	5.87	.822
MS005	We invest in innovation to identify new consumer segments.	1	7	5.25	1.377
MS006	We categorize consumers according to whether they are traveling for business or	4	7	6.26	.854

	leisure or as a group.				
MS007	We categorize consumers and offer different prices based on their location.	1	7	4.29	1.889

DC Distribution channels

DC001	How important are the distribution channels to your hotel / chain?	4	7	6.20	.712
DC002	How important is it that your hotel is represented on every distribution channel?	2	7	5.72	1.091
DC003	How important are online travel agencies (OTA) as efficient distribution tool?	3	7	6.09	.882
DC004	How important are Buying sites or Flash sales to your hotel / chain?	1	7	4.36	1.622
DC005	How important is your branded website as a distribution tool?	1	7	6.13	1.204
DC006	How important is it for you to promote through opaque distribution channels such as Priceline.com?	1	7	4.41	1.651
DC007	How important is it for you to keep your rates similar on all of your distribution channels?	2	7	6.36	.890
DC008	How important is the commission level to use a distribution channel?	3	7	5.87	.900
DC009	How important is it for you to know, when which distribution channels are performing when?	4	7	6.33	.700

CO Competition

CO001	How important is it for you to understand your competitor's pricing strategy?	3	7	5.89	.858
CO002	On average, how important is it for you to set your prices similar to your competitors'?	3	7	5.64	.905
CO003	On average, how important is it for you to set your prices lower than your competitors?	2	7	5.50	.987
CO004	On average, how important is it for you to base your prices higher than your competitors?	1	7	3.92	1.711
CO005	How important is it to understand your competitor's promotional tactics?	2	7	4.79	1.215
CO006	How important is it to understand your competitor's products?	4	7	6.07	.869
CO007	How essential element is it to determine an effective comp set?	4	7	5.91	.803
CO008	To what extent does the quality of comp sets, affect your pricing decisions?	4	7	5.84	.749

SM Social Media

SM001	How important is to you the use of social media as part of your revenue management and pricing strategy to you?	2	7	5.09	1.191

ID	Question	Min	Max	Mean	SD
SM002	How important is it for you to promote your hotel through mobile application as a distribution channel?	2	7	5.53	1.101
SM003	How important is the impact of social media on your property performance indicators?	1	7	5.18	1.251
SM004	How important is the impact of online reputation (reviews) on your profitability?	3	7	6.08	.813
SM005	How important is the use of social media to your hotel's tactical pricing?	1	7	4.71	1.325
SM006	How important is the use of social media within the RM strategy to improve the hotel's market share?	1	7	4.83	1.320

DP Dynamic Pricing

ID	Question	Min	Max	Mean	SD
DP001	Is the implementation and use of dynamic pricing essential to your hotel?	2	7	6.25	.896
DP002	To what extent do promotional policies (Special Offers) affect the hotel prices?	2	7	6.12	.816
DP003	Is dynamic pricing a fair sales distribution approach?	3	7	6.18	.778
DP004	Does dynamic pricing have a positive influence on the hotel sales volume?	4	7	6.29	.689
DP005	Does dynamic pricing create an increase on demand and RevPAR?	4	7	6.05	.815
DP006	Does the use of dynamic pricing increase consumers' comfort to book a room in your hotel?	2	7	5.45	1.100
DP007	Is the consumer's satisfaction important when setting room rates?	3	7	5.62	1.032
DP008	Does the hotel understand the consumer's value for money strategies when setting room rates?	4	7	5.80	.766
DP009	Has the use of dynamic pricing increased the hotel's market share?	3	7	5.72	.988
DP010	Is the competitor's pricing strategy important to you when deciding on room rates?	3	7	5.80	1.007

NY NYOP (Name-Your-Own-Price) model

ID	Question	Min	Max	Mean	SD
	Please answer the following questions **only** if your hotel uses any **opaque distribution channels.**				
NY001	How important is it for you to promote through opaque distribution channels such as Priceline.com?	1	7	5.03	1.691
NY002	How critical is the impact of the name-your-own-price (NYOP) channel on your tactical pricing strategy?	1	7	4.52	2.208
NY003	How critical is the impact of the name-your-own-price (NYOP) channel on your long term pricing strategy?	1	7	4.62	2.080

NY004	How critical is the impact of using the NYOP model on your profitability?	1	7	4.64	2.094
NY005	How important is it for you to sell the excess capacity through an opaque intermediary using the NYOP model?	1	7	4.54	1.915
NY006	How important is it for you to increase the market share of the NYOP model at your hotel?	1	7	4.61	1.988

Source: Author

6.6   Measurement Model

In order to validate the measurement model, the questionnaire consisted of three major sections, incorporating demographics (Figure 6-2). First, the researcher created measurement scales to evaluate the constructs related to revenue management implementation in hotels. These variables mainly consist of revenue management operational methodologies, including revenue management key factors, revenue management incentive metrics (average daily rate (ADR), occupancy percentage (OCC%), and revenue per available room (RevPAR), as well as pricing approaches used in hotels to model revenue management. Second, the researcher created measurement scales to evaluate the pricing strategies related to market segmentation, distribution channels, competition, social media, and dynamic pricing. A confirmatory factor analysis (CFA) was conducted to assess the items' validity in the conceptual model.

Figure 6-2 The Hotel Revenue Management and Pricing Measurement Model
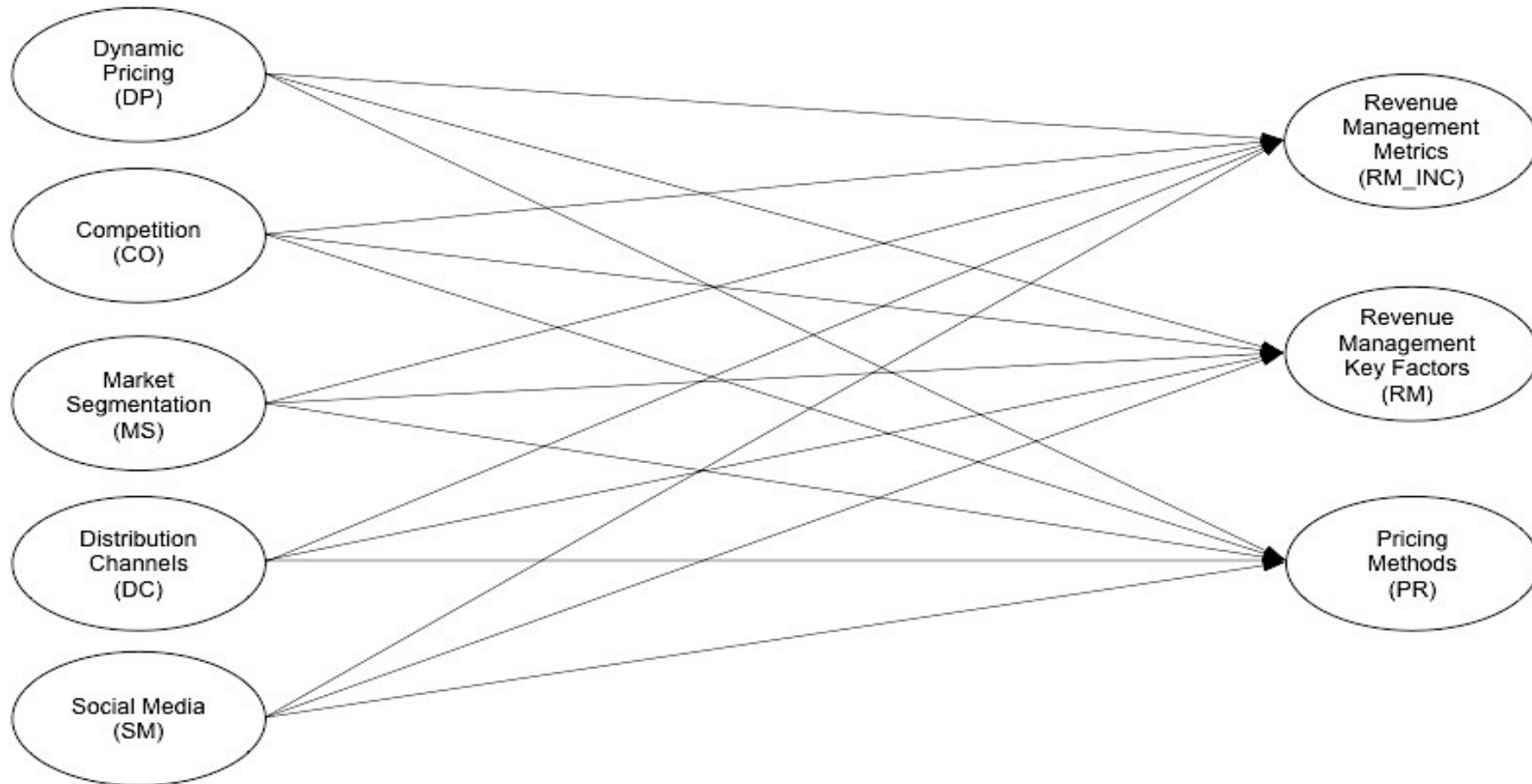
Model summary notes: Independent variables: *market segmentation, distribution channels, competition, social media, dynamic pricing*
Dependent variables: *RM key factors, RM metrics, pricing methods.* Moderator: *hotel category, job profile, NYOP model.*

Source: Author

6.6.1 Measuring Reliability and Validity

After the data collection, the evaluation of the measurement items was assessed on unidimensionality, reliability and discriminant validity to ensure that the scale will confirm the measure concepts. Furthermore, an item measurement instrument is not valid without been reliable.

Unidimensionality is an essential prerequisite for reliability and validity analyses (Nunnally, 1978; Fornell and Larcker, 1981). The computation scores are meaningful if each of the measures is acceptably unidimensional (Anderson and Gerbing, 1988). A construct is unidimensional if the existence of one constructs trait underlying the data (Hattie, 1985). McDonald (1974) argued that 'a set of items is unidimensional if and only if the set fits a (generally non- linear) common factor model with just one common factor'. In conducting the tests, firstly an exploratory factor analysis (EFA) followed by a confirmatory factor analysis (CFA) was employed to evaluate the measurement items and to ensure reliability. According to O'Leary-Kelly and Vokurka (1998), the EFA is preferable in exploratory research.

Therefore, because the sample was not large enough to test the unidimensionality entirely, the researcher created two models and the relevant constructs was separated into three sets of theoretically related measurement variables: revenue management key factors, operational revenue management, and the name-your-own-price selling mechanism.

The factor analysis attempts to determine the number of variables and to generate inter-correlated variables together under one factor. The goal of factor analysis is to reduce 'the dimensionality of the original space and to give an interpretation to the new space, spanned by a reduced number of new

dimensions which are supposed to underlie the old ones' (Rietveld and Van Hout, 1993:254).

An exploratory factor analysis (EFA) was conducted for the related constructs using the principal components analysis (PCA) with a varimax rotation. The results are identified by 5 factors of the operational revenue management, namely, distribution channels, competition, social media, market segmentation, and dynamic pricing. Based on the results of the EFA, the researcher determined several items, which were examined, using two or three factors. Thus, the researcher has dropped the items to increase reliability (Appendix C). The Kaiser-Meyer-Olkin (KMO) result helped verify the measure of sampling adequacy of the analysis. According to Field (2013:685), a KMO of .701 is a good result. Moreover, the Bartlett's Test of Sphericity was significant ($p <$ .001), which indicates the relevance of the sample data for conducting a factor analysis.

Table 6-10 presents the results of the factors' extraction on the basis of the eigenvalues greater than 1 criterion.

Table 6-10 Factor Analysis of Operational RM Indicators

	Component				
	1	2	3	4	5
q_41_SM001	**.726**				
q_41_SM003	**.705**				
q_41_SM005	**.862**				
q_41_SM006	**.847**				
q_51_DP006	**.614**				
q_51_DP007	**.673**				
q_51_DP008	**.539**				
q_11_MS005	**.577**				
q_51_DP001		**.815**			
q_51_DP003		**.775**			
q_51_DP004		**.708**			
q_51_DP005		**.596**			
q_51_DP009		**.541**			
q_41_SM002		**.648**			
q_31_DC001		**.622**			
q_21_CO007		**.605**			
q_21_CO001			**.773**		
q_21_CO002			**.765**		
q_21_CO003			**.568**		
q_51_DP010			**.751**		
q_31_DC002				**.618**	
q_31_DC003				**.564**	
q_31_DC004				**.516**	
q_31_DC006				**.624**	
q_31_DC007				**.579**	
q_41_SM004				**.555**	
q_11_MS002					**.667**
q_11_MS003					**.816**
q_11_MS004					**.770**
% partial explained variance	16.510	15.186	9.432	9.394	8.437
% total explained variance			58.959		
Kaiser-Meyer-Olkin KMO			.701		
Bartlett's Sphericity			1250.698		
df			406		
Sig.			.000		

Note: SM = 'Social Media'; DP = 'Dynamic Pricing'; CO = 'Competition'; DC = 'Distribution Channels'; SM = 'Market Segmentation'. Values in boldface indicate the variables that have a higher load factor.

Source: Author

A confirmatory factor analysis (CFA) was conducted using AMOS 23.0 to validate the measurement model (Arbuckle, 2014). The model was estimated using the maximum likelihood method. It is suggested that a confirmatory factor analysis should be conducted after an exploratory factor analysis has been estimated (Hair *et al.,* 1998:600). The researcher used Goodness-of-fit indexes including the model chi-square, the comparative fit index (CFI), the Tucker-Lewis index (TLI), and the root mean square error of approximation (RMSEA), to estimate the CFA results.

The chi-square test, which should not be significant otherwise, indicates a lack of satisfactory model fit. The smaller the chi-square, the better the fit of the model (McIver and Carmines, 1981). However, the chi-square is affected by the sample size as larger samples yield a more significant chi-square value. Model complexity and distribution of variables also affect the chi-square value and the test may be misleading (Hair *et al.*, 1998:634). The other criteria for the Goodness-of-fit test are the RMSEA, the CFI, and the TLI. There is a good model fit with the RMSEA, if the degree of freedom is less than or equal to .05 (Hu and Bentler, 1999); an adequate fit value is between .05 and less than or equal to .08 (Schumacker and Lomax (2004). The CFI should be equal to or greater than .90 to accept the model. Similarly, if a TLI is greater than or equal to .90 this indicates an acceptable model fit. If it is equal or greater than .95, it is a good model fit (Schumacker and Lomax, 2004).

The results of this measurement model indicated a fairly acceptable model with $\chi2$ (265) = 429.500; p < .001; $\chi2/df$ ratio = 1.621; CFI = .808; TLI = .783; and RMSEA = .091 (Hair *et al.*, 1998:634; Teng *et al.*, 2013). The results show yielded values slightly lower or close to the recommended values. Therefore, the proposed model was deemed acceptable (Mueller and Hancock, 2008:490).

As shown in Table 6-11, all items were significant at the .00 level (e.g. t > 2.0), indicating that there exists a convergent validity (Kohli *et al.*, 1993). All factor loadings were large and highly significant (*t* values ranging from 23.280 to 79.549 (Table 6-11)).

Table 6-11 One-Sample Statistics (n=76)

	Mean	Std. Deviation	t	df	Sig. (2-tailed)	Factor Loading
SM001	5.092	1.191	37.278	75	.000	.727
SM003	5.184	1.251	36.120	75	.000	.785
SM005	4.711	1.325	30.998	75	.000	.855
SM006	4.829	1.320	31.881	75	.000	.866
DP006	5.447	1.100	43.162	75	.000	.653
DP007	5.618	1.032	47.444	75	.000	.669
DP008	5.803	.766	66.015	75	.000	.539
MS005	5.250	1.377	33.233	75	.000	.664
DP001	6.250	.896	60.791	75	.000	.805
DP003	6.184	.778	69.278	75	.000	.794
DP004	6.289	.689	79.549	75	.000	.757
DP005	6.053	.815	64.761	75	.000	.712
DP009	5.724	.988	50.509	75	.000	.709
SM002	5.526	1.101	43.750	75	.000	.683
DC001	6.197	.712	75.863	75	.000	.707
CO007	5.908	.803	64.143	75	.000	.629
CO001	5.895	.858	59.924	75	.000	.875
CO002	5.645	.905	54.384	75	.000	.859
CO003	5.500	.987	48.600	75	.000	.661
DP010	5.803	1.007	50.239	75	.000	.781
DC002	5.724	1.091	45.755	75	.000	.706
DC003	6.092	.882	60.209	75	.000	.573
DC004	4.355	1.622	23.403	75	.000	.650
DC006	4.408	1.651	23.280	75	.000	.659
DC007	6.355	.890	62.251	75	.000	.600
SM004	6.079	.813	65.215	75	.000	.644
MS002	5.737	1.063	47.052	75	.000	.812
MS003	5.947	1.005	51.577	75	.000	.881
MS004	5.868	.822	62.233	75	.000	.732

The researcher checked and conducted a separate CFA for the RM operational, with the following three components: RM key factors, RM incentive metrics, and pricing strategies. However, before the CFA, an exploratory factor analysis, using the principal components analysis (PCA) with a varimax rotation was conducted. The results showed three factors as RM key indicators. The Kaiser-Meyer-Olkin (KMO) result helped verify the measure of sampling adequacy of for the analysis. According to Field (2013:685), a KMO of .714 is a good result. Moreover, the Bartlett's Test of Sphericity was significant ($p < .001$), which indicates the relevance of the sample data for conducting a factor analysis. Table 6-12 presents the results of the factors' extraction on the basis of the eigenvalues greater than 1 criterion.

Table 6-12 Factor Analysis of RM key factors

| | Component | | |
	1	2	3
q_01_RM001	**.543**		
q_01_RM002	**.800**		
q_01_RM003	**.754**		
q_01_RM005	**.588**		
q_01_RM006	**.656**		
q_01_RM_INC007		**.769**	
q_01_RM_INC008		**.807**	
q_01_RM_INC009		**.862**	
q_01_PR001			**.763**
q_01_PR002			**.503**
q_01_PR003			**.834**
q_01_PR005			**.786**
% partial explained variance	30.437	17.720	11.393
% total explained variance		59.550	
Kaiser-Meyer-Olkin KMO		.714	
Bartlett's Sphericity		289.005	
df		66	
Sig.		.000	

Note: RM = 'Revenue Management'; RM_INC = 'Revenue Management Metrics'; PR = 'Pricing Approaches. Values in boldface indicate the variables that have a higher load factor.

The CFA was conducted with the three independent variables: revenue management key factors, revenue management incentive metrics, and pricing approaches, to validate the model fit of the measurement model of 12 items. The CFA results illustrate an adequate model with $\chi2$ (50) = 68.575; p < .001; $\chi2/df$ ratio = 1.371; GFI = .871; CFI = .924; TLI = .899; and RMSEA = .070 (Appendix C). Based on the results, the model is acceptable because the values for the CFI, and the TLI are equal or greater than .90 and the value for RMSEA is below .08, representing a satisfactory model fit (Hair *et al*., 1998:634).

As further evidence of convergent validity, all factor loadings turned out to be large and highly significant (*t* values ranging from 33.229 to 77.151 (Table 6-13)).

Table 6-13 One-Sample Statistics (n=76)

	Mean	Std. Deviation	t	df	Sig. (2-tailed)	Factor loading
RM001	6.303	.712	77.151	75	.000	.676
RM002	6.382	.765	72.688	75	.000	.777
RM003	6.171	.737	72.961	75	.000	.717
RM005	6.053	.831	63.498	75	.000	.642
RM006	5.934	.869	59.514	75	.000	.721
RM_INC007	5.842	1.155	44.084	75	.000	.813
RM_INC008	5.513	1.183	40.623	75	.000	.852
RM_INC009	5.763	1.044	48.127	75	.000	.873
PR001	5.053	1.326	33.229	75	.000	.787
PR002	5.579	.853	57.041	75	.000	.589
PR003	5.224	1.218	37.400	75	.000	.820
PR004	5.658	.974	50.657	75	.000	.759

Source: Author

Finally, an exploratory factor analysis (EFA) using the principal components analysis (PCA) with a varimax rotation was conducted and the results showed one factor as NYOP selling mechanism. The Kaiser-Meyer-Olkin (KMO) result helped verify the measure of sampling adequacy of the analysis. According to Field (2013:685), a KMO of .893 is a marvellous result. Moreover, the Bartlett's Test of Sphericity was significant (p < .001), which indicates the relevance of the sample data for conducting a factor analysis. Table 6-14 presents the results of the factors' extraction on the basis of the eigenvalues greater than 1 criterion.

Table 6-14 Factor Analysis of NYOP selling mechanism

	Component 1
q_100_NY001	**.823**
q_100_NY002	**.950**
q_100_NY003	**.974**
q_100_NY004	**.974**
q_100_NY005	**.943**
q_100_NY006	**.967**
% partial explained variance	88.344
% total explained variance	88.344
Kaiser-Meyer-Olkin KMO	.893
Bartlett's Sphericity	216.704
df	15
Sig.	.000

Note: NY = 'NYOP selling mechanism'. Values in boldface indicate the variables that have a higher load factor.

Source: Author

Moreover, as expected all factor loading were large and highly significant (t values ranging from 10.634 to 16.229 (Table 6-15).

Table 6-15 One-Sample Statistics (n=76)

	Mean	Std. Deviation	t	df	Sig. (2-tailed)
NY001	5.033	1.691	16.299	29	.000
NY002	4.519	2.208	10.634	26	.000
NY003	4.615	2.080	11.315	25	.000
NY004	4.643	2.094	11.731	27	.000
NY005	4.536	1.915	12.536	27	.000
NY006	4.607	1.988	12.265	27	.000

Source: Author

The convergent validity must be supported by (a) the reliability of each measure, and (b) by the composite reliability (CR), and the average variance extracted (AVE) (Fornell and Larcker, 1981; Bagozzi, Yi, and Phillips, 1991, Hair *et al.* (1998) (Table 6-16 to 6-19)).

Reliability indicates 'the extent to which the data collection techniques or analysis procedures will yield consistent findings' (Saunders, 2009:156), meaning that reliability refers to the 'consistency of the results obtained' (Ryan, 1995). It assesses the consistency of that given construct (Hair *et al.*, 1998:118) and the degree to which the items are homogeneous. The reliability analysis uses Cronbach's alpha (α) coefficient as the most popular index to measure consistency. According to Nunnally (1978), the generally agreed upon lowest level for Cronbach's alpha value, in order for the findings to be considered reliable is .70. However, as this research is exploratory, Hair *et al.* (1998:118) states that values with an alpha threshold level of α ≥ .60 are acceptable.

The overall Cronbach's alphas values are estimated for the construct's revenue management key factors, revenue management metrics, pricing approaches, market segmentation, competition, distribution channels, social media, dynamic

pricing, and the usage of the NYOP pricing. In this study, they ranged from .720 to .973 (Table 6-16), which is greater than the threshold level of .70, recommended by Nunnally's (1978). This indicates a good level of consistency on the subjects' responses to the constructs. The only exception was the variable of distribution channels. However, the Cronbach's alpha estimate was at .692, which is slightly below the .70 acceptable level of Nunnally (1978), but higher than the suggested cut off of $\alpha \geq .60$, used by Hair *et al*. (1998:118). The measurement items have been introduced by the researcher, which has affected the validity and reliability, this value has also been accepted.

Table 6-16 shows the different reliability levels. It presents the final measurement items with the factor loadings and Cronbach's *alpha* estimates for each construct.

The reliability estimates for revenue management implementation scales including revenue management key factors (α = 0.748), revenue management metrics (α = 0.799), and pricing approaches (α = 0.720) indicate a good level of internal consistency.

The reliability estimates for the 8-item social media scale (α = 0.870), 8-item dynamic pricing (α = 0.865), 4-item competition (α = 0.800), 6-item distribution channels (α = 0.692), and 3-item market segmentation (α = 0.736) show a high level of internal consistency.

The reliability estimates for the 6-item NYOP (Name-Your-Own-Price) mechanism (α = 0.973) used in hotels indicate a high level of consistency.

Table 6-16 Reliability analysis for multi-item scales

	Measurement Items	Factor Loading	Alpha (α)
	Revenue management (N of items=5)		
RM001	Forecasting Demand	.676	
RM002	Price Management	.777	
RM003	Capacity Management	.717	**.748**
RM005	Market Positioning	.642	
RM006	Distribution Channel Management	.721	
Percent of Variability		50.172	
Eigenvalue		2.509	
	Revenue Management Metrics (N of items=3)		
RM007	Is the revenue manager's performance directly measured through RM metrics? (ADR, RevPAR etc.)	.813	
RM008	Hotel Manager performance is connected to RM metrics? (ADR, RevPAR etc.)	.852	**.799**
RM009	Sales Manager performance is connected to RM metrics? (ADR, RevPAR etc.)	.873	
Percent of Variability		71.683	
Eigenvalue		2.150	
	Pricing (N of items=4)		
PR001	PR - Cost-based pricing	.787	
PR002	PR - Inventory-based pricing	.589	
PR003	PR - Customer-centric pricing	.820	**.720**
PR005	PR - Bid price	.759	
Percent of Variability		55.395	
Eigenvalue		2.216	
	Market Segmentation (N of items=3)		
MS002	We divide consumers into groups based on similar or same buying characteristics.	.812	
MS003	We group consumers and focus on understanding their needs.	.881	**.736**
MS004	We understand the consumer target markets of our competitors.	.732	
Percent of Variability		65.694	
Eigenvalue		1.971	

Dynamic Pricing (N of items=8)		**Factor Loading**	**Alpha (α)**
DP001	Is the implementation and use of dynamic pricing essential to your hotel?	.805	
DP003	Is dynamic pricing a fair sales distribution approach?	.794	
DP004	Does dynamic pricing have a positive influence on the hotel sales volume?	.757	
DP005	Does dynamic pricing create an increase on demand and RevPAR?	.712	
DP009	Has the use of dynamic pricing increased the hotel's market share?	.709	.865
DC001	How important are the distribution channels to your hotel / chain?	.683	
SM002	How important is it for you to promote your hotel through mobile application as a distribution channel?	.707	
CO007	How essential element is it to determine an effective comp set?	.629	
Percent of Variability		52.778	
Eigenvalue		4.472	

Social Media (N of items=8)		**Factor Loading**	**Alpha (α)**
SM001	How important is to you the use of social media as part of your revenue management and pricing strategy to you?	.727	
SM003	How important is the impact of social media on your property performance indicators?	.785	
SM005	How important is the use of social media to your hotel's tactical pricing?	.855	
SM006	How important is the use of social media within the RM strategy to improve the hotel's market share?	.866	.870
DP006	Does the use of dynamic pricing increase consumers' comfort to book a room in your hotel?	.653	
DP007	Is the consumer's satisfaction important when setting room rates?	.669	
DP008	Does the hotel understand the consumer's value for money strategies when setting room rates?	.539	
MS005	We invest in innovation to identify new consumer segments.	.664	
Percent of Variability		52.893	
Eigenvalue		4.231	

Competition (N of items=4)	Factor Loading	Alpha (α)
CO001 How important is it for you to understand your competitor's pricing strategy?	.875	
CO002 On average, how important is it for you to set your prices similar to your competitors'?	.859	
CO003 On average, how important is it for you to set your prices lower than your competitors?	.661	**.800**
DP010 Is the competitor's pricing strategy important to you when deciding on room rates?	.781	
Percent of Variability	63.774	
Eigenvalue	2.551	

Distribution Channels (N of items=6)		
DC002 How important is it that your hotel is represented on every distribution channel?	.706	
DC003 How important are online travel agencies (OTA) as efficient distribution tool?	.573	
DC004 How important are Buying sites or Flash sales to your hotel / chain?	.650	
DC006 How important is it for you to promote through opaque distribution channels such as Priceline.com?	.659	**.692**
DC007 How important is it for you to keep your rates similar on all of your distribution channels?	.600	
SM004 How important is the impact of online reputation (reviews) on your profitability?	.644	
Percent of Variability	40.970	
Eigenvalue	2.458	

NYOP (Name-Your-Own-Price) (N of items=6)		
NY001 How important is to promote through opaque distribution channels such as Priceline.com?	.823	
NY002 How critical is the impact of the name-your-own-price channel at your tactical pricing strategy?	.950	
NY003 How critical is the impact of the name-your-own-price (NYOP) channel at your long term pricing strategy?	.974	**.973**
NY004 How critical is the impact using the NYOP model for your profitability?	.974	
NY005 How important is to sell the excess capacity through an opaque intermediary using the NYOP	.943	
NY006 How important is to increase the market share of the NYOP model at your hotel?	.967	
Percent of Variability	88.344	
Eigenvalue	5.301	

The coefficient alpha should not be preserved as the only measurement reference of reliability. Cronbach alpha is a ratio of the true score variance to the observed score variance (Hattie, 1985). Therefore, the Cronbach's alpha values depend on the distribution of the true scores of the population (Nunnally, 1978).

The composite reliabilities (CR) were used to assess the degree of consistency between multiple measurements of a variable (Hair et al., 1998). The CR were calculated using the measures suggested by Fornell and Larcker (1981), CR $\eta = \frac{(\Sigma\lambda\gamma\iota)2}{(\Sigma\lambda\gamma\iota)2+(\Sigma\varepsilon\iota)2}$ where CR = composite reliability for scale η; $\lambda\gamma\iota$ = standardized loading for scale item $\gamma\iota$, and $\varepsilon\iota$ = measurement error for scale item $\gamma\iota$ (Fornell and Larcker, 1981). The CR for the five constructs range from .806 to .978 all of them exceeding 0.70, which is the acceptable cutoff level suggested by Bagozzi and Yi (1988) (Table 6.17).

Table 6-17 Construct reliability statistics

Constructs	Items	Construct reliability
Criteria		**≥0.7**
Revenue management factors	5	.834
Revenue management metrics	3	.883
Pricing approaches	4	.830
Market segmentation	3	.851
Competition	4	.874
Distribution channels	6	.806
Social media	8	.898
Dynamic pricing	8	.889
NYOP model	6	.978

Source: Author

The average variance extracted (AVE) values range from .501 to .884, which exceeds the cutoff threshold level of .50 (Fornell and Larcker, 1981; Bagozzi, Yi, and Phillips, 1991). Hence, the measurement model has good convergent validity, except for the distribution channels construct value of .410, which is lower than the suggested level (Table 6-18). The AVE values used to measure the convergent validity were calculated using the $V\eta = \frac{\Sigma\lambda\gamma\iota2}{\Sigma\lambda\gamma\iota2 + \Sigma\varepsilon\iota}$ where $V\eta$ = average variance extracted for scale η; $\lambda\gamma\iota$ = standardized loading for scale item $\gamma\iota$, and $\varepsilon\iota$ = measurement error for scale item $\gamma\iota$ (Anderson and Gerbing, 1988; Fornell and Larcker, 1981).

Table 6-18 Construct reliability statistics

Constructs	Items	Average variance extracted (AVE)
Criteria		**≥0.5**
Revenue management factors	5	0.501
Revenue management metrics	3	0.716
Pricing approaches	4	0.554
Market segmentation	3	0.657
Competition	4	0.638
Distribution channels	6	0.410
Social media	8	0.529
Dynamic pricing	8	0.528
NYOP model	6	0.884

Source: Author

Discriminant validity can be used to evaluate the measurement model when the average variance extracted (AVE) in each construct exceeds the square value of the coefficient in which the correlations are not constrained to unity. Hence, each construct's AVE must be compared with its squared correlations with other

constructs (Anderson and Gerbing, 1988). Therefore, to determine if the shared variances are lower than the AVE for the individual constructs, the researcher computed the shared variance for all possible pairs of variables. The shared variances values used to measure the discriminant validity were calculated using $\gamma^2=1-\psi$ where γ^2 = shared variance between variables, and with the diagonal element of ψ indicating the amount of unexplained variance (Hult, Ketchen, and Slater 2005; Tajeddini, Elg, and Trueman 2013). The results shown in Table 6-19 show that the AVE values are mostly higher on the squared inter-construct correlations, which indicates that the discriminant validity exists. The shared variances range from 2% to 36%, with the AVEs ranging between 41% and 88%. Table 6-19 provides information for the mean, standard deviation, and correlations of the variables.

6.6.2   Common method variance

A potential problem concerning about the main sources of the collected data for the constructs is the common method bias (Bagozzi and Yi, 1991). Campbell and Fiske (1959) argue that regardless of the source, data is self-reported and may cause systematic measurement errors, leading to misleading interpretations and conclusions of the hypothesized model. To detect the common method variance the Harman's single factor test was employed (Podsakoff, MacKenzie, Lee, and Podsakoff, 2003). Using EFA, if a single factor either accounts for the majority of the variance is indicated by analysis then is indicative of a common method variance. The analyses resulted in a total of 8 factors with eigenvalues greater than 1.0, which account for 64.19% of the total variance. Meanwhile, factor 1 only explained 23.07% of the variance (Appendix C). Therefore, the common method variance is not to be considered.

Table 6-19 Correlations Between Variables and Shared Variances of Measures

	SM	DP	CO	DC	MS	NYOP	RM	RM_INC	PR
SM	**0.529**	.13	.13	.15	.04	.20	.06	.02	.19
DP	.358**	**0.528**	.25	.12	.09	NA	.35	.09	NA
CO	.358**	.509**	**0.638**	.21	.07	.32	.11	.11	.07
DC	.387**	.356**	.465**	**0.410**	.06	.36	.09	.02	.05
MS	.192	.307**	.270*	.263*	**0.657**	.06	.05	.02	.02
NYOP	.447*	.068	.567**	.603**	-.245	**0.884**	NA	.02	.16
RM	.251*	.595**	.334**	.305**	.242*	.017	**0.501**	.16	.02
RM_INC	.164	.304**	.337**	.150	.172	.164	.401**	**0.716**	.05
PR	.445**	-.009	.281*	.239*	.162	.403*	.147	.226*	**0.554**
Mean	5.241	6.016	5.710	5.502	5.850	4.720	6.122	5.706	5.049
Std. Deviation	.8583	.6152	.7439	.7588	.7839	1.816	.5391	.9536	.9487

Note: Sample size = 76

The values on the diagonal (in boldface) represent the average variance extracted (AVE) for each construct. The shared variances are included in the upper diagonal.

** $p < 0.01$, * $p < 0.05$

Source: Author

6.6.3   Nonparametric statistical test – Kolmogorov-Smirnov test

In supporting the assessment process of the normality of the collected data, a nonparametric statistical test was conducted. The Kolmogorov-Smirnov (K-S) and Shapiro-Wilk tests were conducted to calculate the level of significance of the differences to a normal distribution. The Shapiro-Wilk Test is more sensitive even for small samples ($n < 20$) (Shapiro and Wilk, 1965). Table 6-20 includes both statistic tests, the degree of freedom (sample size) and the significance value of this test. The statistics for the Kolmogorov-Smirnov test was found to be significant. The Sig. is less than $p < .05$, therefore, the data deviates from a normal distribution (Field, 2013:187).

Table 6-20 Test of Normality - Kolmogorov-Smirnov Test

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
SM (Social Media)	.124	76	.006	.914	76	.000
DP (Dynamic Pricing)	.121	76	.008	.960	76	.016
CO (Competition)	.151	76	.000	.921	76	.000
DC (Distribution Channels)	.129	76	.003	.952	76	.006
MS (Market Segmentation)	.194	76	.000	.838	76	.000
RM (Revenue Management)	.120	76	.008	.962	76	.022
RM_INC (RM Metrics)	.160	76	.000	.915	76	.000
PR (Pricing Approaches)	.150	76	.000	.951	76	.005

a. Lilliefors Significance Correction

Source: Author

6.6.4   Correlation coefficient of constructs analysis

To test the strength of the relationship between the variables a correlation test was employed. The correlation coefficient is measured on a standard scale that ranges between -1.0 and +1.0. Cohen (1988) provides guidelines for interpreting the correlation coefficients' effect size. He uses three sizes: small (r = 0.10) medium (r = 0.30) or large (r = 0.50). However, he merely derives his empirical guidelines from his (personal) experience with effect sizes and correlation coefficients. These suggestions are only meant to be loose guidelines for researchers' "These conventions for small, medium, and large effect sizes are . . . recommended for use only when no better basis for estimating the effect size index is available" (cf. Hallahan and Rosenthal, 1996).

Table 6-21 presents the correlation coefficients between the constructs. The results indicate positive and significant correlation coefficients between competition (r(74) = 0.567, $p<0.01$), distribution channels (r(74) = 0.603, $p<0.01$), and the Name-Your-Own-Price selling mechanism. Note that in parentheses is reported the degree of freedom (df) ($N - 2$ for correlation). Also, the results show a positive and significant correlation between social media (r(74) = 0.447, $p<0.05$), and the Name-Your-Own-Price selling mechanism. However, the relationship between dynamic pricing, and market segmentation is not significant.

The findings also reported a positive and significant correlation between dynamic pricing (r(74) = 0.595, $p<0.01$), competition (r(74) = 0.334, $p<0.01$), distribution channels (r(74) = 0.305, $p<0.01$), and revenue management key factors. Moreover, the results show a positive and significant correlation

between market segmentation ($r(74)$ = 0.242, $p<0.05$) and revenue management key factors. However, the relation to the Name-Your-Own-Price selling mechanism is insignificant.

The results exhibited in Table 6-21 show the positive and significant correlation between dynamic pricing ($r(74)$ = 0.304, $p<0.01$), competition ($r(74)$ = 0.337, $p<0.01$), and revenue management metrics. Moreover, the results indicate that the relationship between social media, distribution channels, market segmentation, and the Name-Your-Own-Price selling mechanism is not significant.

In addition, the findings highlight the positive and significant correlation between social media ($r(74)$ = 0.445, $p<0.01$), and pricing approaches. Furthermore, they show a significant and positive correlation between competition ($r(74)$ = 0.281, $p<0.05$), distribution channels ($r(74)$ = 0.239, $p<0.05$), and pricing approaches. However, the relationship between dynamic pricing, market segmentation, and pricing approaches is insignificant.

The results indicate that the relationship between revenue management and the Name-Your-Own-Price selling mechanism is insignificant.

Furthermore, the findings reported a positive and significant correlation between revenue management key factors ($r(74)$ = 0.401, $p<0.01$) and revenue management metrics. However, the relationship between the Name-Your-Own-Price selling mechanism is insignificant.

The findings provide support for the positive and significant correlation between the Name-Your-Own-Price selling mechanism ($r(74)$ = 0.403, $p<0.05$), revenue management metrics ($r(74)$ = 0.226, $p<0.05$), and pricing approaches. Finally, the results indicate that the relationship between revenue management key factors and pricing approaches is insignificant.

Table 6-21 Mean and Standard Deviation and the Inter-correlations among the variables

	Mean	SD	SM	DP	CO	DC	MS	NYOP	RM	RM_INC	PR
SM (Social Media)	5.241	.858	1								
DP (Dynamic Pricing)	6.016	.615	.358**	1							
CO (Competition)	5.710	.743	.358**	.509**	1						
DC (Distribution Channels)	5.502	.758	.387**	.356**	.465**	1					
MS (Market Segmentation)	5.850	.783	.192	.307**	.270*	.263*	1				
NYOP (Name-Your-Own-Price)	4.720	1.816	.447*	.068	.567**	.603**	-.245	1			
RM (Revenue Management)	6.122	.539	.251*	.595**	.334**	.305**	.242*	.017	1		
RM_INC (RM Metrics)	5.706	.953	.164	.304**	.337**	.150	.172	.164	.401**	1	
PR (Pricing)	5.049	.948	.445**	-.009	.281*	.239*	.162	.403*	.147	.226*	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Author

6.7 Results and Analysis

The researcher performed a multiple regression analysis with hierarchical methods of entry to test the relationships. The researcher has chosen the regression analysis because of sample size limitations. Hence, the independent variables are entered in two stages. First, the independent variables that we want to examine are entered into the regression. Second, the independent variables whose relationships we want to examine are entered after the controls. The researcher created two separate series of five regression models (Cohen, Cohen, West, and Aiken, 2003). This hierarchical analysis allows a fixed order of entry of a set of variables in order to control the coefficients necessary to assess the degree and character of the relationships among the variables, to evaluate the change in the amount of variance explained (ΔR^2), to test the interaction effects, and to conduct an overall incremental F tests of statistical significance (Cohen *et al.,* 2003:158; Tajeddini, 2015; Hair *et al.,* 1998:161).

The researcher also employed a test of multicollinearity. The variation inflation factor (VIF) was close to 1 for every variable. A VIF of 1 indicates that there is no correlation among the independent variable and the remaining predictor variables. The VIF acceptance level is between 1 and 4. A score beyond 4 asks for further investigation, whilst VIFs with a maximum level of 10 is a sign of a serious collinearity problem and requires correction (Hair *et al.*, 1998).

Figure 6-3 illustrates the hotel revenue management and pricing model relationships' results of the hierarchical regression analysis.

Figure 6-3 Final Hotel RM and Pricing Model
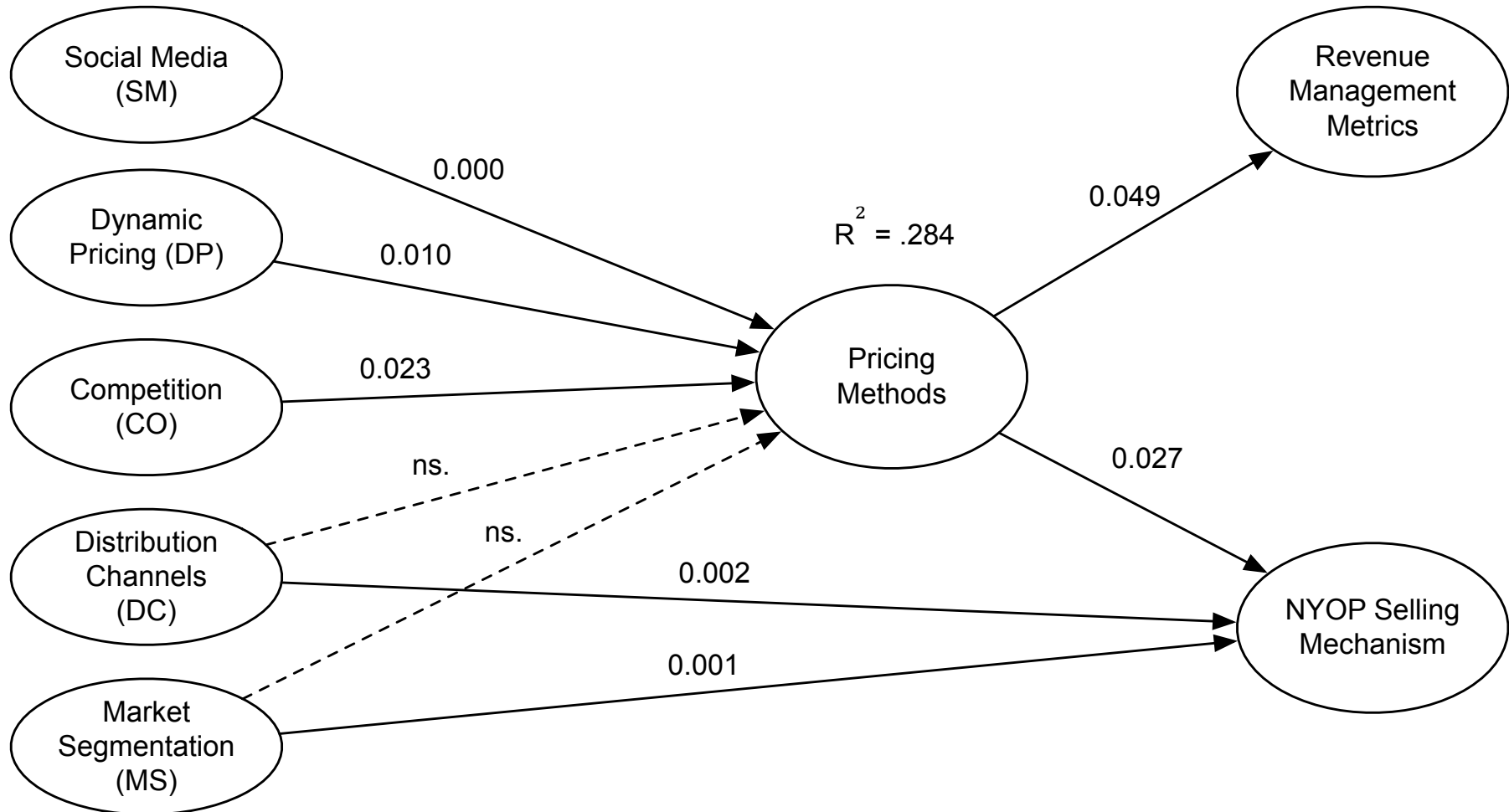
Source: Author

6.7.1 Pricing Methods and Operational Levels of RM

The impact of hotels focusing on the tactical pricing strategy of revenue management performance has been examined using a regression analysis. The researcher used multiple regressions to test the relationships. The multiple regression analysis of the relationships between the main independent variables, namely social media, dynamic pricing, competition, distribution channels, and market segmentation, were entered first as a block. This regression used pricing methods as the dependent variable. Table 6-22 presents the parameter summary based on the independent variables.

Table 6-22 Regression Analysis: Pricing methods & Tactical levels of RM

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.533	.284	.254	.81931

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	19.172	3	6.391	9.520	.000
	Residual	48.331	72	.671		
	Total	67.502	75			

Regression Model

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1	(Constant)	3.288	.997		3.297	.002		
	Competition	.353	.151	.277	2.331	.023	.706	1.417
	Social Media	.506	.121	.458	4.180	.000	.830	1.205
	Dynamic Pricing	-.483	.183	-.313	-2.638	.010	.706	1.417

Dependent Variable: Pricing Methods (PR)

Source: Author

The regression model for pricing optimization methods is:

Pricing Methods = α + β_1 Social Media + β_2 Dynamic Pricing + β_3 Competition + β_4 Distribution Channels + β_5 Market Segmentation.

The ANOVA results show a significant relationship between the different components of the tactical levels of revenue management, which are competition, social media, as well as dynamic pricing, and the pricing methods variance. The results indicate the value of F = 9.520 with a level of significance of $p < 0.001$ (Table 6-22).

The results show a measure of the 'goodness of fit' of the estimated model using the R^2 value, a fraction between 0.0 and 1.0. The value of R square in this analysis is 0.284, which means that 28 per cent of the total tactical levels variation in the company pricing methods variable are explained by the independent variable of tactical levels of revenue management strategy of competition, social media, and dynamic pricing. As previously mentioned, the researcher also employed a test of multicollinearity. The variation inflation factor (VIF) was close to 1 for every variable (Table 6-22). The VIF and the tolerance value for competition (1.417; .706), social media (1.205; .830), and dynamic pricing (1.417; .706) respectively were close to 1. This indicates that there is no correlation among the independent variable and the remaining dependent variables. The VIF maximum level of 10 is an indication of a serious collinearity problem and requires correction (Hair et al., 1998).

This research was conducted on the perceived practical approach that the use of pricing methods has an implication on key elements that influence the acceptability of pricing optimization. For this reason it is essential to comprehend the set of factors that make tactical pricing a challenging, complex

set of decisions faced by hotels that will maximize expected revenue contributions. The basic concept of approaches to pricing consists of cost-plus, market based, and value based processes for managing pricing decisions to establish a pricing optimization.

The results of this regression, presented in Table 6-22, confirm that competition is positively related to the pricing optimization methods, with standardized coefficients of β=0.277, t-value=2.331, and p<0.05. They also show that social media is positively related to the pricing optimization methods, with standardized coefficients of β=0.458, t-value=4.180, and p<0.001. Moreover, dynamic pricing indicates statistical significance related to pricing optimization methods with standardized coefficients of β=-0.313, t-value=-2.638, and p<0.01. As Table 6-22 shows, two paths were found not to be statistically significant. Hence, the distribution channel path was not positively related to pricing methods with p=0.686. The market segmentation path with p=0.340 showed a similar picture (see Appendix C for more details). In practice, market segmentation and distribution channels are essential components of revenue management tactics. This functional challenge is an opportunity for the revenue manager to leverage the extensive potential of revenue management domains and to implement the total revenue management approach to maximize revenue. Historically, the aim of revenue management has been to manage the allocation of capacity for opening and closing room rates overtime based on expected demand for the best use of the number of rooms. However, through the years, revenue management became strategic, encompassing marketing and distribution channel strategies (Noone, McGuire, and Rohlfs, 2010). This being said, one of the key revenue management strategies now consists of the ability to segment consumers into different categories (Phillips, 2005:123; Bitran

and Mondschein, 1995). This market segmentation is based on different consumer characteristics in relation to certain products, their responsiveness associated with the price consumers are willing to pay for a room, the type of room, the opportunity cost, and the various fences that make the product available or unavailable to certain consumer segments.

From the tactical perspective, another strategic element is the management of distribution channels. Distribution channels serve as repositories to dedicate resources of capacity and prices. It is a real-time face of revenue management and booking limits (Phillips, 2005). The importance of this capability creates an understanding that is vital to a hotel revenue manager to ensure that they are working with the most profitable channels. Each distribution channels has a cost linked to the consumer's acquisitions. Stimulating demand through various distribution channels may provide an opportunity for the hotel manager to understand the effectiveness of each channel and to decrease the costs. These incremental costs vary by channel. Therefore, it becomes important that the revenue manager incorporates them into pricing decisions, in order to defend margins.

In order to further investigate the effects of the relationships between pricing methods and the tactical level of day-to-day manager decisions, the researcher performed a simple main effects regression, using the hierarchical method of entry to interpret any interaction between pricing optimization methods and any other alternative approaches to pricing and revenue optimization.

The result of the regression analysis on the interaction between pricing optimization methods and the NYOP selling mechanism is shown in Table 6-23. The ANOVA results reveal a significant relationship between alternative pricing approaches, such as the NYOP selling mechanism, and the pricing optimization

methods variable with a value of $F = 5.436$ and a level of significance of $p<0.05$. The results indicate that there is a positively related, significant linear relationship between the NYOP selling mechanism and the pricing optimization methods, with standardized coefficients of $\beta=0.403$, t-value=2.332, and $p<0.05$ (Table 6-23).

Table 6-23 Regression Analysis: Pricing Methods & NYOP mechanism

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.403	.163	.133	.77726

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	3.284	1	3.284	5.436	.027
Residual	16.916	28	.604		
Total	20.200	29			

Regression Model

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	4.475	.401		11.159	.000		
NYOP selling mechanism	.185	.079	.403	2.332	.027	1.000	1.000

Dependent Variable: Pricing Methods (PR)
Source: Author

The results show that the value of R Square in this analysis is 0.163, which means that 16 per cent of the total variation in the company pricing methods variable is explained by the independent variable of the NYOP selling mechanism. Although the percentage of the response variable variation is low, it is expected that the R Squared value will be low. It was mentioned above that the NYOP selling mechanism is a third party reservation provider associated with higher distribution costs. Hence, the majority of the respondents' properties

are not selling their inventory through an opaque pricing mechanism (Table 6-8). The scatter of data points that measure the dispersion around the line of regression is .77, and is small as an indication of the accuracy of the prediction. The variation inflation factor (VIF) and tolerance value for the NYOP selling mechanism is 1.000; 1.000. That indicates that there is no correlation between the independent variable and the remaining dependent variables (Table 6-23).

In addition, the researcher used simple regression to test the positive relationship between revenue management performance indicators connected to the main stakeholders, such as hotel manager, and revenue managers (i.e., average daily rate (ADR), occupancy percentage (OCC.%); and revenue per available room (RevPAR)) to pricing methods. The results of the regression analysis of this relationship are shown in Table 6-24.

Table 6-24 Regression Analysis: Pricing Methods and RM Metrics

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.226	.051	.038	.93033

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	3.455	1	3.455	3.992	.049
Residual	64.047	74	.866		
Total	67.502	75			

Regression Model

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	3.765	.652		5.779	.000		
RM Incentive Metrics	.225	.113	.226	1.998	.049	1.000	1.000

Dependent Variable: Pricing Methods (PR)

Source: Author

The ANOVA results show a significant relationship between revenue management incentive metrics and pricing optimization methods variable with a value of F = 3.992 and a level of significance of p < 0.05. Hence, the results indicate that there is a positively related significant linear relationship between revenue management incentive metrics and pricing optimization methods, with standardized coefficients of β=0.226, t-value=1.998, and p<0.05 (Table 6-24). Moreover, the value of R Square in this analysis is 0.051, which means that 5 per cent of the total variation in the company pricing methods variable is explained by the independent variable of the revenue management incentive metrics. The variation inflation factor (VIF) and tolerance value for the revenue management incentive metrics is 1.000; 1.000 respectively. That indicates that the results of the analysis are reliable and do not show any multicollinerality. Consequently, nowadays, the role of revenue managers is becoming central to the implementation of pricing strategies. Their effort towards tactics to optimize revenue can influence the improvement of demand generation of RevPAR to achieve the final goal. The challenges that a revenue manager faces related how the results will positively affect the key performance metrics (KPIs) and rewarding, generating a higher level of value to the stakeholders business. Understanding the strengths and weaknesses, mainly of the operational components that affect short and long-term performance, constitutes an important criterion to establish and measure the impact of revenue management.

Finally, the researcher examined the relationship between the NYOP selling mechanism and the operational components of revenue management. He

performed a multiple regression, using the hierarchical method of entry, to interpret any interaction between the variables.

The result of the regression analysis of the interaction between the NYOP selling mechanism and the operational level components is shown in Table 6-25. The ANOVA results reveal a significant relationship between the variables, with a value of $F = 17.090$ and a level of significance of $p < 0.001$.

The results show that the value of R Square in this analysis is 0.559, which means that 55 per cent of the total variation in the company NYOP mechanism variable is explained by the independent variables of the distribution channels and market segmentation.

Table 6-25 Regression Analysis: NYOP selling mechanism and RM factors

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.747	.559	.526	1.25035

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	53.437	2	26.719	17.090	.000
	Residual	42.211	27	1.563		
	Total	95.648	29			

Regression Model

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	3.141	2.351		1.336	.193		
	Distribution Channels	1.620	.293	.739	5.524	.000	.913	1.095
	Market Segmentation	-1.293	.374	-.463	-3.459	.002	.913	1.095

Dependent Variable: NYOP selling mechanism.
Source: Author

The strong R^2 value indicates that the relationships between the NYOP selling mechanism and the distribution channels as well as the market segmentation, are strong. The scatter of data points around the line of regression is 1.25035. The variation inflation factor (VIF) and the tolerance value for distribution channels (1.095; .913), as well as the market segmentation (1.095; .913), respectively all were close to 1. That indicates that there is no correlation between the independent variable and the remaining dependent variables (Table 6-25).

In addition, the results of this regression, presented in Table 6-25, confirm that distribution channels are positively related to the NYOP selling mechanism, with standardized coefficients of β=0.739, t-value=5.524, and p<0.001. It also confirms that market segmentation indicates statistical significance related to the NYOP selling mechanism, with standardized coefficients of β=-0.463, t-value=-3.459, and p<0.01.

These findings support the thesis fifth objective, which is that the hotel pricing strategy optimization is associated with the target market segmentation to capture the consumer surplus in order to maximize the hotel profitability. Hotels implement market segmentation strategies to find consumers that are willing to pay a specific customised price for the received service. Therefore, hotel management can employ a pricing structure that induces the price-sensitive consumers, in order to segment them, based on reservation request characteristics. Utilizing the increasing use of the Internet for segmenting consumers is an effective tactical pricing strategy, which reduces the hotel's needs to compromise and create price promotions. However, segmenting pricing requires creative tactics to find a basis for a segmentation (Nagle and Holden, 2002:250).

Figure 6-4 Testing the NYOP selling mechanism to revenue management components
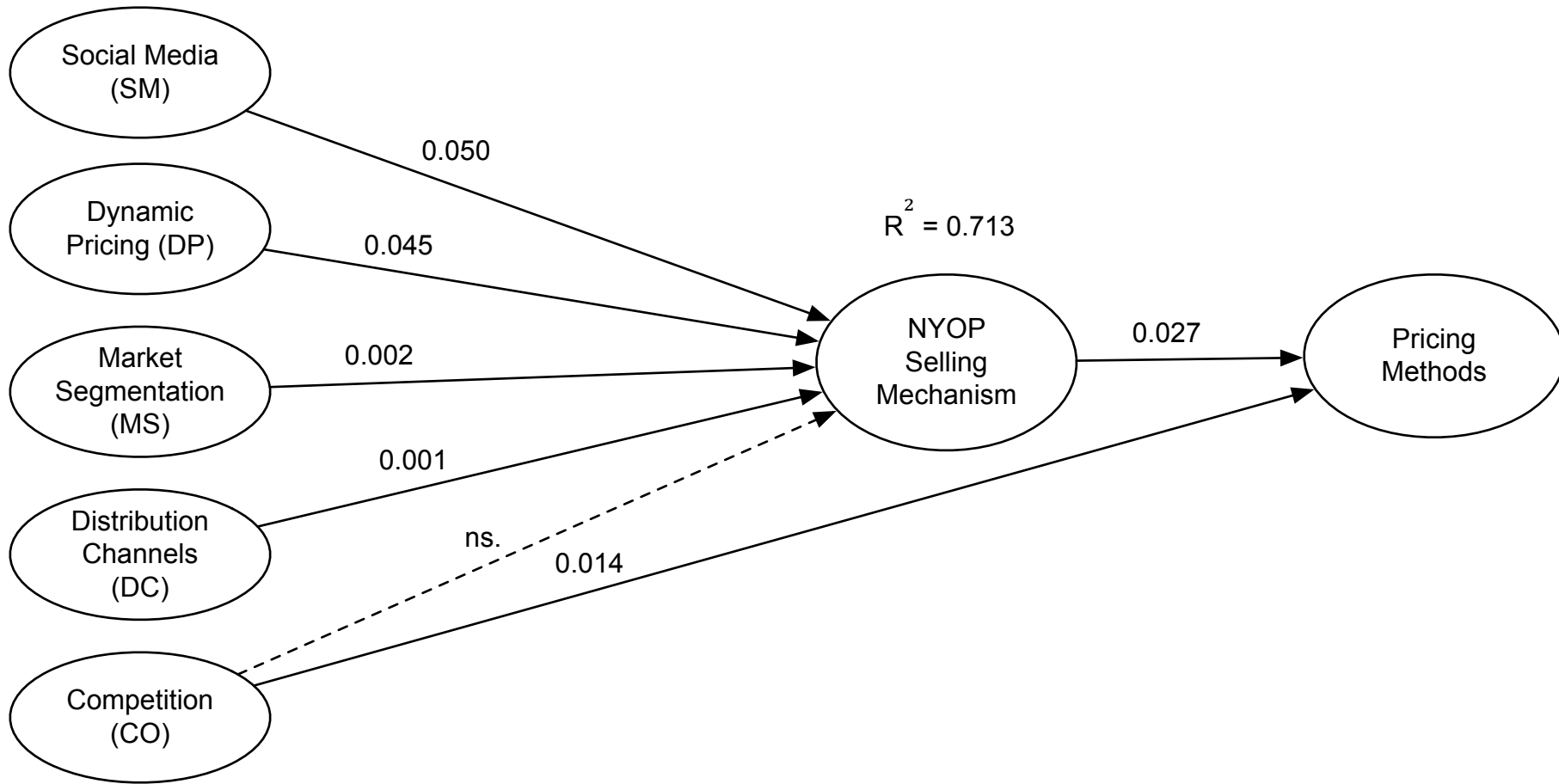
Source: Author

6.7.2 Revenue Management and Pricing Application in Hotels

The Internet provides alternative pricing models based on customized pricing, such as the auction pricing. The existence of customized hotel pricing, using a bid pricing mechanism (NYOP) is motivated by the seller who bid on a potential deal (Phillips, 2005). The key expectation from the hotel is to successfully determine the bid value. The main aspect to examine is the fact that a full price optimization may require the hotel to decide on key elements that will drive price changes, affecting the bid price. Therefore, the main objective is to maximise the expected contribution margin from the bid, measuring the effect of pricing policy associated with the consumer surplus. The surplus is the difference between the willingness to pay (WTP) and the purchase price. The formula to the expected contribution margin can be expressed as (Phillips, 2005):

Contribution margin at price p = (Deal contribution at p)

$$\times \text{ (Probability of winning bid at } p) \qquad (6.7.2.5)$$

In practice, there are different levels on which the hotel does not only have to decide about the bid price but also on other elements related to the bid. Therefore, the researcher used multiple regression to test the relationships between the following items: the main uncertainty variables related to the bid as social media, the dynamic pricing function, the incorporating competition, the distribution channels, and the market segmentation. They were first entered as a block. This regression used the biding mechanism (NYOP selling mechanism) as dependent variable. Table 6-26 presents the parameters' summary based on the independent variables.

The regression model for NYOP selling mechanism is:

NYOP selling mechanism = α + β_1 Social Media + β_2 Dynamic Pricing + β_3 Competition + β_4 Distribution Channels + β_5 Market Segmentation.

Table 6-26 NYOP selling mechanism

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.844	.713	.653	1.07026

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	68.157	5	13.631	11.900	.000
Residual	27.491	24	1.145		
Total	95.648	29			

Regression Model

Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	VIF
1 (Constant)	2.767	2.417		1.145	.264		
Social Media	.437	.211	.250	2.068	.050	.816	1.226
Dynamic Pricing	-.835	.395	-.285	-2.117	.045	.661	1.512
Distribution Channels	1.296	.332	.591	3.909	.001	.523	1.911
Market Segmentation	-1.140	.331	-.408	-3.442	.002	.851	1.175
Competition	.694	.374	.289	1.859	.075	.496	2.015

Dependent Variable: NYOP selling mechanism

Source: Author

The ANOVA results show a significant relationship between the components of the tactical levels of revenue management, which are: social media, dynamic

pricing, distribution channels, and market segmentation and the NYOP selling mechanism variance. The results indicate a value of $F = 11.900$ with a level of significance of $p < 0.001$ (Table 6-26).

The results show a measure of the estimated model using the R^2 value, which in this analysis is 0.713. This R square value means that 71 per cent of the total tactical level elements that impact the acceptability of pricing and revenue optimization variation in the company pricing strategies, using the NYOP selling mechanism variable, are explained by the independent variable of tactical levels of revenue management strategy of social media, the dynamic pricing, the distribution channels, and the market segmentation. As previously mentioned, the researcher also employed a test on multicollinearity. The variation inflation factor (VIF) was close to 1 for every variable (Table 6-26). The VIF and tolerance value for social media (1.226; .816), dynamic pricing (1.512; .661), distribution channels (1.911; .523), and market segmentation (1.175; .851) respectively were all close to 1. That indicates that there is no correlation between the independent variable and the remaining dependent variables (Hair et al., 1998).

The results of this regression, presented in Table 6-26, confirm that social media is positively related to the NYOP selling mechanism, with standardized coefficients of $\beta=0.250$, t-value=2.068, and $p<0.05$. They also confirm that dynamic pricing is related to the NYOP selling mechanism with standardized coefficients of $\beta=-0.285$, t-value=-2.117, and $p<0.05$. Moreover, distribution channels are positively significant to the NYOP selling mechanism, with standardized coefficients of $\beta=0.591$, t-value=3.909, and $p<0.001$. Market segmentation indicates statistical significance related to NYOP selling mechanism with standardized coefficients of $\beta=-0.408$, t-value=-3.442, and

p<0.01. As Table 6-26 shows, one path was found statistically not significant. The competition path was not positively related to NYOP selling mechanism, with *p*=0.075. In practice, competition is one of the most important factors influencing hotel pricing. Price optimization is becoming a challenging function if the hotel does not know what the competitors are charging. However, in a pricing mechanism, such as the NYOP selling mechanism, which operates as an opaque model, competition plays an important, though secondary role. The model is used to sell the distressed inventory and to minimize cannibalization to loyal consumers. The consumer is unaware of the hotel name and product. The name of the hotel will be disclosed after the hotel room has been booked and confirmed.

Furthermore, the researcher used simple regression to test the positive relationship between pricing optimization approaches to determine the prices that maximize revenue incorporating the willingness to pay (WTP); the competitive environment (i.e. cost-plus, market based, value based); and the NYOP selling mechanism. Cost-plus is the most commonly used pricing approach. However, each pricing method ignores important aspects of each other related to the pricing strategy (Phillips, 2005).

The result of the regression analysis of the interaction between the NYOP selling mechanism and the pricing optimization methods is shown in Table 6-27. The ANOVA results reveal a significant relationship between alternative pricing approaches, such as the NYOP selling mechanism, and the pricing optimization methods variable with a value of $F = 5.436$ and a level of significance of $p < 0.05$. The results indicate that there is a positively related significant linear relationship between the pricing optimization methods and the NYOP selling

mechanism, with standardized coefficients of β=0.403, t-value=2.332, and p<0.05 (Table 6-27). Moreover, the results show that the value of R Square in this analysis is 0.163, which means that 16 per cent of the total variation in the company's alternative pricing approaches, such as the NYOP selling mechanism variable, is explained by the independent variable of the pricing optimization methods.

Table 6-27 Regression Analysis: NYOP selling mechanism and Pricing Methods Relationship

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.403	.163	.133	1.69134

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	15.550	1	15.550	5.436	.027
Residual	80.098	28	2.861		
Total	95.648	29			

Regression Model

Model	Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1 (Constant)	.026	2.037		.013	.990		
Pricing Methods	.877	.376	.403	2.332	.027	1.000	1.000

Dependent Variable: NYOP selling mechanism

Source: Author

Though the percentage of the response variable variation is low, it is expected that the R Squared value will be low. The NYOP selling mechanism is based on

a bidding matching approach. The consumer's random selection of hotels does not require the hotel to compete on rates with other competitors. Therefore, this does not influence the profitability (Anderson and Wilson, 2011). The pricing optimization methods are based on traditional approaches to pricing, incorporating costs where the hotel sets prices based on the cost, adding a markup margin which covers allocated, fixed, and variable costs to provide profit beyond the costs. This cost-plus pricing, also known as mark-up pricing is the most frequently used method of setting the price for a product. Competition, where the market itself sets the prices, and the consumer value on services being sold, and where the hotels offer consumers the service they will on a price predicted by consumers to utilize sales (Phillips, 2005). Therefore, determining the consumer's willingness to pay requires an understanding to estimate attribute prices and demands.

The scatter of data points around the line of regression is 1.69. The variation inflation factor (VIF) and tolerance value for the NYOP selling mechanism is 1.000; 1.000. That indicates that there is no correlation between the independent variable and the remaining dependent variables (Table 6-27).

In order to further investigate the effects of the relationships between the factors influencing hotel pricing and the pricing optimization methods, the researcher performed a simple main effects regression, using the hierarchical method of entry, to interpret any interaction between competition and any other alternative approaches to pricing and revenue optimization (Table 6-28).

The result of the regression analysis on the interaction between the pricing optimization methods and the factors influencing pricing capabilities, such as competition, is shown in Table 6-28. Hotels also need a clear positioning

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strategy and they need to set prices based on those of the competition, thus obtaining a strategic pricing performance. The impact of a competitor pricing strategy is part of the hotel's tactical or strategic pricing calculations. The question of whether a hotel offers prices that are lower or higher in contrast to their competitors' raises a new demand and accounts to a higher revenue performance. Moreover, the competitors' prices facilitate a responsive performance related to various economic fluctuations. According to Phillips (2005:25), companies do not use 100 per cent of any pricing approaches. Rather, they adjust them according to tactical or long-term goals. The ANOVA results reveal a significant relationship between the variables with a value of $F = 6.366$ and a level of significance of $p < 0.01$. This shows that hotels using a hybrid approach when pricing, which may change, based on the goal to achieve. Within this decision period, the emphasis is dispersed across the department pricing and revenue optimization based on market share improvement or relate to customer value, to reflect the hotel expectations. These pricing decisions are increasingly important for improving profit through determining alternative pricing approaches for customer segments instead of strictly concentrate to one only approach.

In contrast to the pricing approaches for the individual consumers, in practice, hotels have to customise pricing responses to business-to-business (B2B) relationships. In such business environment customised pricing is a common practice based on experience and judgement because is an opportunity to either win or lose the requested offer (Bodea and Ferguson, 2014:186).

Table 6-28 Regression Analysis: Pricing Methods and Competition Relationships

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.281	.079	.067	.91648

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.347	1	5.347	6.366	.014
	Residual	62.155	74	.840		
	Total	67.502	75			

Regression Model

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	VIF
1	(Constant)	3.000	.819		3.662	.000		
	Competition	.359	.142	.281	2.523	.014	1.000	1.000

Dependent Variable: Pricing Methods (PR)

Source: Author

The results show that the value of R Square in this analysis is 0.079, which means that 7 per cent of the total variation in the company pricing methods variable is explained by the independent variable of the competition. The results indicate that there is a positively related significant linear relationship between the factor of competition to the pricing optimization methods, with standardized coefficients of $\beta=0.281$, t-value=2.523, and $p<0.01$ (Table 6-28). The prices offered by the competitors influence the hotel pricing optimization methods because they offer a minimal room for error. It is essential that the hotels identify the comparing hotels to determine a clear strategy based on their past performance. Moreover, to gain market share, a hotel should more effectively

manage the cost structure, including distribution costs, than its competitors. A hotel that attempts to successfully compete in a competitive environment usually differentiates its service providing upgrade service with value for money. The scatter of data points around the line of regression is 0.91648. The variation inflation factor (VIF) and tolerance value for the revenue management incentive metrics are 1.000; 1.000 respectively. That indicates that the results of the analysis are reliable and that they do not show any multicollinerality (Hair, *et al.*, 1998).

Trying to expand the analysis of the relationship between pricing strategies and selling mechanisms through distribution channels, the above results answer the sixth objective of the study. The objective examines pricing methods used to influence consumers when purchasing a travel product online through online travel intermediaries. The question refers to how the hotels would choose to sell their products. A major channel helping hotels to also reach consumers that are sensitive to prices who otherwise would continue to stay outside the hotel's market share, is featured in the opaque selling mechanism. The results indicate a positive relationship between this selling mechanism and the consumer's perception of online booking.

Table 6-29 presents a summary of the results of the regression analysis of the pricing optimization methods and their relationships. Moreover, it shows the relationships between the NYOP selling mechanism and its associated factors.

Table 6-29 Summary Results of Regression Analyses

Dependent Variable: Model and Variables Independent Variables	Pricing Methods	Beta	t-value	Significant t	Std. Error	Multicollinerality		Results
						VIF	Tolerance	
Social Media		.277	2.331	.023	.151	1.417	.706	
Dynamic Pricing		.458	4.180	.000	.121	1.205	.830	
Competition		-.313	-2.638	.010	.183	1.417	.706	
Overall F	9.250							
p-value	.000							
R^2	.284							
Adjusted R^2	.254							
NYOP selling mechanism		.403	2.332	.027	.079	1.000	1.000	
Overall F	5.436							
p-value	.027							
R^2	.163							
Adjusted R^2	.133							
RM Incentive Metrics		.226	1.998	.049	.113	1.000	1.000	
Overall F	3.992							
p-value	.049							
R^2	.051							
Adjusted R^2	.038							

Continued

Table 6-29 Summary Results of Regression Analyses (continued)

Dependent Variable: Model and Variables Independent Variables	NYOP selling mechanism	Beta	t-value	Significant t	Std. Error	Multicollinerality VIF	Tolerance	Results
Social Media		.250	2.068	.050	.211	1.226	.816	
Dynamic Pricing		-.285	-2.117	.045	.395	1.512	.661	
Distribution Channels		.591	3.909	.001	.332	1.911	.523	
Market Segmentation		-.408	-3.442	.002	.331	1.175	.851	
Overall F	11.900							
p-value	.000							
R^2	.713							
Adjusted R^2	.653							
Pricing Methods		.403	2.332	.027	.376	1.000	1.000	
Overall F	5.436							
p-value	.027							
R^2	.163							
Adjusted R^2	.133							

Source: Author

6.8   Summary

The study focused on the use of pricing approaches as part of the revenue management strategy in hotels. The researcher examined the factors and tactics required to establish demand approaches, using the tactical levels of revenue management framework and focuses on differentiating beyond the inventory control strategies. Hotels are using revenue management and pricing to increase profit and to manage supply and demand. In reality, this revenue management decision process contributes to an improvement on the performance metrics, i.e. it enhances the hotel's RevPAR value. The current chapter examines the findings of the quantitative research, emphasising revenue management practices and the associated challenges faced by each of the stakeholder groups, as well as the impact of dynamic pricing on a hotel's performance. The objectives of this study were: to examine the implementation of revenue management as a broad strategy and more specifically the concept of dynamic pricing, a price adjustment depending upon the level of demand and consumer willingness to pay for the provided services.

In this study, the researcher first presented the respondents profile concerning demographic characteristics. The numbers of respondents reported are equally split between male (50 per cent, or 38) and female respondents (also 50 per cent, or 38). Moreover, the majority of the respondents are middle aged (31 – 50 years old). In regards to their educational qualifications, most of them have a Bachelor's degree 43.4 per cent (23), with the second group of participants holding a Master degree or higher (MSc or MBA) 38.1 per cent (29), respectively. In addition, the study shows that 36.9 per cent (14) of the women occupy a department director or division director position equal to their male

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colleagues. Moreover, this study shows that 50 per cent (19) of the women hold a department manager position unlike, to their male colleagues, amongst which only 23.7 per cent (9) occupy such a position. Furthermore, 60.5 per cent (46) properties identified that they have a revenue manager, 80.5 per cent (37) of them belong to a higher service level (5 stars or branded properties). Additionally, 22.4 per cent (17) properties mentioned that the hotel general manager is responsible for the hotel pricing strategy.

Revenue management and pricing have a critical role to play in day-to-day hotel operations and initiatives maximisation. So far, revenue management has mostly been focused on forecasting and optimization models. However, in this study the researcher is focused on revenue management implementation, based on the components of tactical levels of revenue management and alternative pricing approaches, such as the opaque selling mechanism. This study demonstrates that 36.8 per cent of the respondent properties transact business through a type of opaque selling mechanism.

The fourth objective of this research is related to the revenue management implementation as a broad strategy and more specifically, the extent and the use of that revenue management, as well as dynamic pricing methodologies and their success in the hospitality industry, together with their relation to the RM framework. Talluri and van Ryzin (2004) acknowledge that revenue management can be deployed on two levels, the price-based and the quantity-based level. The former provides pricing approaches such as dynamic pricing and alternative pricing approaches (willingness to pay) and the latter the capacity and overbooking control. The researcher based his research on this

framework, expanding the levels and including the online environment on the classification of distribution channels. The results show a positive correlation between pricing methods and distribution channels. This is possible because the online distribution channels, such as online travel agencies, offer hotels extra services, thus providing them information in the mode of aggregate data related to their competitions' pricing. On the one hand, this becomes widely adopted for the industry. On the other hand, the Internet has created new opportunities and is providing the consumers with unprecedented price visibility (Phillips, 2005). However, it becomes essential that the hotels estimate the distribution channel costs and incorporate them into their pricing strategy because the cost range will differ among the different channels.

The fifth objective investigates the impact of dynamic pricing mechanisms, used in hotels to model consumer behaviour, creating pricing strategies related to the target market segmentation. From a hotel's perspective, this would mean that it would be preferable to determine the pricing mechanisms for the same product and to use different prices for different consumers. Thus, customised pricing and product differentiation would reduce competition uncertainty (Phillips, 2005:269) and each supplier would have the opportunity to offer profitable prices that would increase profit. Understanding consumer's needs establishes an effective incentive for offering prices that will maximise the hotel's revenue. Hotels are striving to reduce distribution costs, by exploring different methods through less expensive and more efficient channels. Therefore, utilizing the concept of dynamic pricing has enabled hoteliers to provide direct sales to final consumers. Consequently, the hotel management can employ a pricing structure that will induce the price-sensitive consumers, in order to segment

them based on reservation request characteristics. Because of the differentiated willingness to pay, the hotel creates a pricing policy with restrictions (fences). However, the ability to segment the hotel market depends upon the hotel management's capability to identify the different groups and their willingness to pay (Phillips, 2005). Therefore, segmented pricing requires creative tactics that will create a basis for a segmentation, due to the relationship between revenue management, consumer's experiences and consumer loyalty (Nagle and Holden, 2002:250; Kimes, 1994).

The close connection of consumers' perceptions of prices and the effect on pricing decisions, within the context of an ongoing relationship, have been discussed within the sixth objective of the study. This objective examines pricing methods used to influence consumers when purchasing a travel product online through online travel intermediaries. A major factor for reaching the final consumer involves selling through online distribution channels (i.e. OTA). A model of helping hotels reach consumers, is featured in the opaque selling mechanism (NYOP selling mechanism), which has a strong influence on competition, without cannibalizing changes in demand, pricing strategies, and hotel branding. The hotel guarantee service specification, is yet another way to adjust prices depending upon the level of demand and the consumer's willingness to pay for the provided services.

Following the regression analysis, measuring the relationships correlation between the variables, which are high, this study demonstrates evidence that the measurement model is empirically valid.

7 SOCIAL MEDIA AND REVENUE MANAGEMENT

Revenue management; pricing; online travel agencies (OTAs); social media; what picture does that bring to mind?

7.1   Introduction

This chapter discusses social media as a distribution channel that stimulates consumer behaviour using pricing as a tool to influence demand. It explores the motivational factors that determine the consumer's adoption of social media and their implementation in hotel revenue management operational level and pricing strategies. The rise of e-commerce has increased the use of distribution channels and as a result the real time pricing updates and consumer responses. This creates a need for hotels to implement online pricing strategies and to adapt and to operate rapidly there on. Therefore, hotel revenue managers should take into account the new way of thinking, namely that of interaction, responding to consumers' preferences with a target in mind to improve profitability, based on different pricing methods distributed through social media. Social media has moved pricing strategies into a new particularly challenging level. The aim of this chapter is to examine the relationships how social media used as a distribution channel to encourage consumers to utilize direct bookings through pricing techniques when purchasing online travel products and how this impact revenue strategies and profitability, which represents the seventh objective of this research.

In Section 7.2, the researcher, following the research's framework, explains the influence of social media on the revenue management pricing decisions at the operational level in hotels. It shows how social media can help hotels

implement dynamic pricing features in order to offer the consumer inventory availability and promotions. Section 7.3, describes the path model and the hypotheses then examines the proposed relationships. Specifically, four hypotheses were proposed. Next, Section 7.4 presents the results of Pearson's correlation coefficient bivariate analysis in order to test the strength of the relationship between the variables. In Section 7.5, the researcher presents the first analysis, the exploratory factor analysis (EFA) that supports the model fit employing an analysis of the constructs. The chapter proceeds with an analysis of the study results, highlighting the employed techniques and further discussing it in Sections 7.5.1 and 7.5.2. The researcher performed multiple regression analyses with hierarchical methods of entry to test the relationships. Finally, section 7.6 presents the conclusion.

7.2   Social Media and Revenue Management

In the current years, social media has experienced an unprecedented popularity and has created a new tool for hotels to interact with consumers. Because the hospitality and tourism industries have taken advantage of this trend, social media has a big impact on their businesses. Social reviews can influence demand (Anderson, 2012). Hence, hotels are using social channels to stimulate demand, exercising a consumer-centric approach. Therefore, this can impact hotel conversion rates between prices and demand positively or negatively. Higher review scores increase offered prices and demand. Hence, it is crucial for hotels to look into optimizing their revenue and return on investment (ROI). Although social media might help hotels to increase consumer satisfaction based on generated content reviews, potentially influences consumer-booking patterns, and produces room sales for the hotel in an attempt to drive social

media optimization strategies, the main question about social media revenue optimization and about measuring the ROI remains. This is explained by the fact that it is more complicated to measure the ROI from social media compared to the other distribution channels.

Figure 7.1 illustrates a graphical overview of hotel RM, presenting the relationship of social media as a distribution channel with the RM day-to-day (tactical) responsibilities.

Figure 7-1 Revenue Management and Social Media Relationship
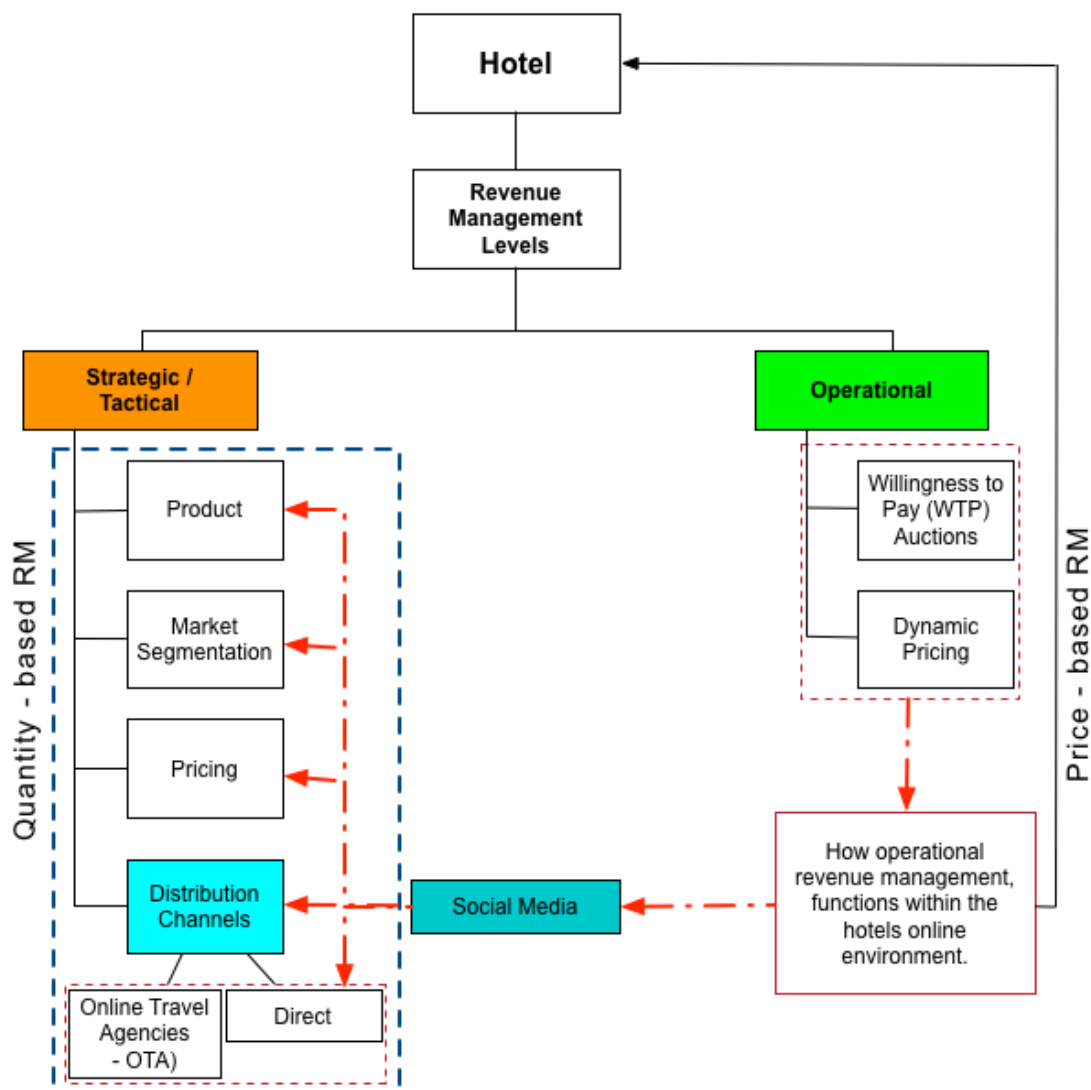
Source: Author

As shown herein, hotels use a variety of distribution channels to enhance their engagement with consumers (Buhalis and Laws, 2001). Hence, hotels have to choose the right distribution channel that generates high occupancy with high net ADR yields. In practice, hotels pay a fee or commission, referred to as a distribution cost, to travel intermediaries (distribution channels) for every generated booking. Thus, the net ADR yield is a means of driving bookings that is affected by the distribution channel. Hayes and Miller (2011:265) refer to the net ADR yield as a percentage of the normal rate, after being deducting the distribution channel fee for a room's sale from the selling price. The expected net contribution on the selling price is illustrated by the following equation:

$$\text{Net ADR yield} \; = \; \frac{\text{Selling Rate - Distribution Cost}}{\text{Selling Rate}} \qquad (7.2.1)$$

Therefore, a key element, which is the hotel financial performance, depends on the effective implementation of the distribution strategy. Although, O'Connor (2003) argues that there is no relationship between distribution channels and rates offered, the empirical reality in day-to-day hotel operations is very different. In the past, hotel rates were mainly fixed. Currently, hotels tend to apply dynamic pricing approaches to attract consumers and influence their booking behaviour. This emergence pertains to the characteristics of the hotel industry because of the perishable nature of the hotel rooms and the hotels' high fixed costs. According to this, revenue managers have to manipulate the different distribution channels in such a way that the consumer will book the hotel room through the less costly channel in order to improve the hotel's outcome that translate into revenue maximization. The revenue managers were tasked to evaluate each distribution channel based on rate conversions,

determined by predicted demand, the room rate achieved for any reservation, and the open – close inventory allocation for each channel. This requires an activity-based incremental costing model (Phillips, 2005). Tranter, Stuart-Hill, and Parker (2009:110) suggested a channel evaluation according to the bookings and the revenue generated by the channels. To measure the channel contribution in practice, the authors have used the following equations:

$$\text{Average Channel Contribution} = \frac{\text{Total Revenue Generated in Channel}}{\text{Total Number of Transactions in Channel}} \quad (7.2.2)$$

$$\text{Channel Contribution Percentage} = \frac{\text{Total Channel Revenue}}{\text{Total Revenue Generated by all Channels}} \quad (7.2.3)$$

The online travel environment has created an exposure to price transparency. Furthermore, transparency of pricing has reached another level mainly because of the dynamics and constantly changing market characteristics through the use of social media. However, in practice revenue generating campaigns on social media sites are not always about optimizing promotions, offering lower prices for hotel rooms in order to foster demand for distressed inventory. Only offering lower rates cannot change the consumer's behaviour. Online pricing transparency makes consumers aware of market prices accustomed to the consumer market segment. Currently, consumers are in control, as they choose where they want to get information from and which brands they want to engage with. Since the price is not the only source of revenue, determining the elasticity between consumer willingness to pay and demand is a challenge. This elasticity of demand is related to consumer price sensitivity. It measures the relationship

between the percentage change in demand for a given percentage change in price and can be expressed as:

$$\varepsilon = \frac{\Delta Q/Q}{\Delta P/P} = \frac{\partial Q}{\partial P}\frac{P}{Q} \qquad (7.2.4)$$

Where ε is the price elasticity, P is the price, and Q is the demanded inventory. Based on these facts, hotels are using social media to create demand from additional sources of revenue contributed by a consumer beyond the room rates. This additional revenue is driven from ancillary products or services (Phillips, 2005:138). According to Cross, Higbie, and Cross (2009), hotels can benefit from ancillary sales that possibly might generate a significant revenue source. Social media provides the channel to distribute and optimize the ancillary product or services sales as the main revenue stream in order to maximize the expected revenue. Hotels are incorporating revenue management procedures to generate revenue contribution, utilizing all revenue generating assets beyond the transient clients and group businesses in a hotel, referred to as 'total hotel revenue management' (THRM). However, to estimate the ancillary contribution from each revenue-generating channel can be challenging because it is unknown at the time of room pricing. How to calculate the expected net revenue contribution, including the distribution costs is shown in the following equation (Phillips, 2005):

Net Contribution = Room rate + Ancillary contribution - Incremental cost $\qquad (7.2.5)$

Finally, looking at long-term revenue management strategies, the effective use of social media creates the potential to increase brand awareness that leads to

consumer trust and loyalty towards hotel. Consumer retention has been identified as a key challenge for hotels (Cross, Higbie, and Cross, 2009), thus the consumer feedback becomes important. Established trust in services and purchasable products tends to improve awareness and increase revenues (Noone, McGuire, and Rohlfs, 2011). Based on the information available through the Internet, consumers' positive feedback plays an important role. In fact, a price reduction would not benefit the hotel in case of bad reviews, given their overpowering negative impact.

7.3   Hypothesised Model of Social Media Use in Revenue Management

This analysis uses data from the conducted hotel survey analysed in details in the previous chapter. The data has been collected via a web-based survey questionnaire. The study focused on hotel executives that hold a managerial position and managers with a direct influence on revenue management and pricing decisions. A total of 76 questionnaires were usable with a final sample that was composed of 50% (38) males and 50% (38) females. The distribution channel is a key component of promoting hotel inventory, however the OTA's consolidation (e.g. Expedia, Orbitz and Travelocity vs. Priceline group) takes advantage and makes hotels dependent on OTA. Looking at this distribution relationship, hotels should evaluate regularly which distribution channels provide benefit.

In the model proposed by this study, revenue managers promote pricing strategies, using social media, either through the firm's own transaction-processing systems or through channel management. The use of social media provides an additional channel to optimize the distribution, which influences profitability based on control of margins. Hotels need to review their distribution

portfolio and make strategical use of social media analytics to overcome the dependence on OTA's, targeting consumer satisfaction, distribution cost reduction, and revenue improvement (Withiam, 2012).

To measure the distribution channel effectiveness of social media and the opportunities afforded for revenue management implementation leveraging this functionality expedite conversation to pricing strategies, the following hypotheses is proposed:

Hypothesis 1: there is a positive relationship between social media towards distribution channels use.

Hypothesis 2: there is a positive relationship between distribution channels and dynamic pricing strategies when a revenue manager uses social media to promote dynamic pricing offers.

Hypothesis 3: there is a positive relationship between distribution channels and different pricing approaches when a revenue manager uses social media to promote sales based on different other pricing approaches.

In addition, this study also discusses the direct effect that social media may have on pricing strategies:

Hypothesis 4a: there is a direct relationship between social media and dynamic pricing.

Hypothesis 4b: there is a direct relationship between social media and pricing techniques.

To examine the hypothesized relationships a path model showing the relationships between social media and revenue management practices was created. Figure 7-2 illustrates the proposed model.

Figure 7-2 Hypothesized Model of Social Media Use and RM Relationships
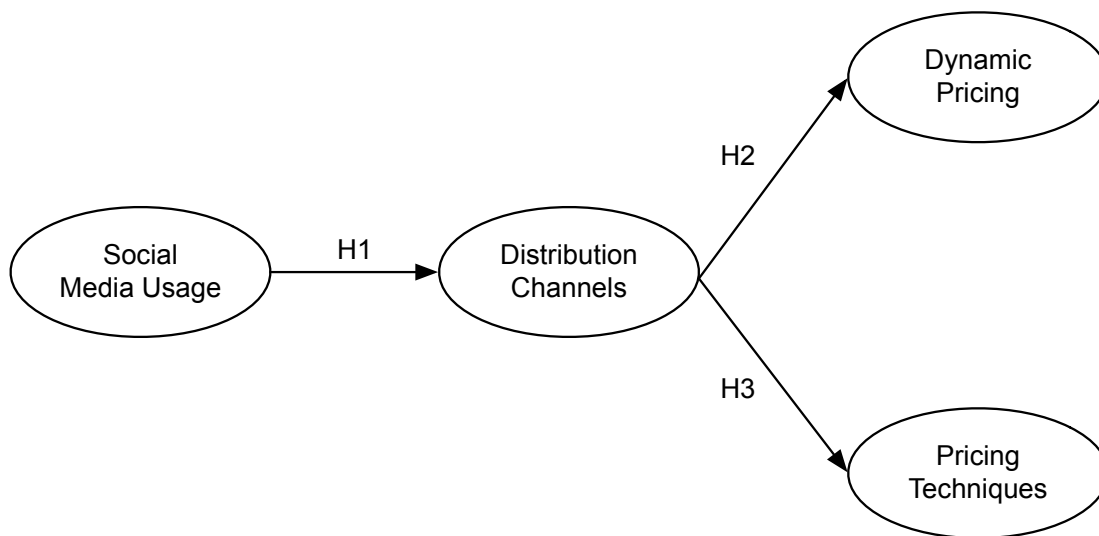
Source: Author

An exploratory factor analysis (EFA) was conducted for the related constructs, using the principal components analysis (PCA) with a varimax rotation. For the factor analysis of the relationship between social media and operational revenue management, four (4) variables were observed, namely, distribution channels, social media, pricing approaches, and dynamic pricing. Based on the results of the EFA, the researcher determined several items, which were examined, using two or three of the variables. Thus, the researcher has deleted the items to maintain and increase reliability validity (Appendix D). To examine whether the data was suitable for analysis, the Kaiser-Meyer-Olkin (KMO) test helped verify the measure of sampling adequacy of the analysis. According to Field (2013:685), a KMO of .737 would be labelled as 'middling' falling into the range of a good result. Moreover, the Bartlett's Test of Sphericity was significant ($p < .001$), which indicates the relevance of the sample data for conducting a factor analysis is appropriate. Table 7-1 presents the results of the variables' extraction on the basis of the eigenvalues greater than 1 criterion. Moreover, it shows the results with the reliability test for each variable.

Table 7-1 Exploratory Factor Analysis of Social Media Relationships (N=76)

Observed Variables	Factor Analysis	Eigenvalue	Variance Explained	Reliability alpha (α)
Social Media		6.515	25.057	.863
q_41_SM005	**.857**			
q_41_SM006	**.840**			
q_41_SM001	**.773**			
q_41_SM003	**.720**			
q_51_DP007	**.611**			
q_51_DP008	**.554**			
q_51_DP006	**.542**			
Dynamic Pricing		3.975	15.289	.861
q_51_DP003	**.837**			
q_51_DP004	**.804**			
q_51_DP001	**.767**			
q_51_DP009	**.687**			
q_51_DP005	**.631**			
q_31_DC001	**.596**			
q_41_SM002	**.577**			
q_31_DC009	**.514**			
Distribution Channel		1.981	7.620	.692
q_31_DC002	**.664**			
q_31_DC007	**.618**			
q_31_DC003	**.613**			
q_31_DC006	**.609**			
q_41_SM004	**.530**			
q_31_DC004	**.511**			
Pricing Approaches		1.875	7.210	.712
q_01_PR003	**.723**			
q_01_PR005	**.693**			
q_01_PR001	**.649**			
q_01_PR002	**.564**			
q_01_PR004	**.528**			
% total explained variance			55.177	
Kaiser-Meyer-Olkin KMO			.737	
Bartlett's Sphericity			1016.227	
df			325	
Sig.			.000	

Note: SM = 'Social Media'; DP = 'Dynamic Pricing'; DC = 'Distribution Channels'; PR = 'Pricing Approaches. Values in boldface indicate the variables that have a higher load factor.

Source: Author

Reliability indicates 'the extent to which the data collection techniques or analysis procedures will yield consistent findings' (Saunders, 2009:156), meaning that reliability refers to the 'consistency of the results obtained' (Ryan, 1995). It assesses the consistency of that given construct (Hair *et al.*, 1998:118) and the degree to which the items are homogeneous. The reliability analysis uses Cronbach's alpha (α) coefficient as the most popular index to measure consistency. According to Nunnally (1978), the generally agreed upon lowest level for Cronbach's alpha value, in order for the findings to be considered reliable, is .70. However, as this research is exploratory, Hair *et al.* (1998:118) states that values with an alpha threshold level of α ≥ .60 are acceptable.

The overall Cronbach's alpha values are estimated for the construct's social media, dynamic pricing, distribution channels, and pricing techniques. In this study, they ranged from .712 to .863 (Table 7-1), which is greater than the threshold level of .70, recommended by Nunnally (1978). This indicates a good level of consistency on the subjects' responses to the constructs. The only exception was the variable of distribution channels. However, the Cronbach's alpha estimate was at .692, which is slightly below the .70 acceptable levels of Nunnally (1978), but higher than the suggested cut off of α ≥ .60, used by Hair *et al*. (1998:118). The measurement items have been introduced by the researcher, which has affected the validity and reliability. This value has also been accepted.

Table 7-1 shows the different reliability levels. It presents the final measurement items with the factor loadings and Cronbach's *alpha* estimates for each construct.

The reliability estimates for pricing techniques (α = 0.712), and the 6-item distribution channels (α = 0.692) indicate a good level of internal consistency.

Moreover, the reliability estimates for the 7-item social media scale ($\alpha = 0.863$), and the 8-item dynamic pricing ($\alpha = 0.861$), show a high level of internal consistency.

The coefficient alpha should not be preserved as the only measurement reference of reliability. Cronbach's alpha is a ratio of the true score variance to the observed score variance (Hattie, 1985). Therefore, Cronbach's alpha values depend on the distribution of the true scores of the population (Nunnally, 1978).

7.4   Correlation Coefficient of Constructs Analysis

To test the linearity of the data, thus, the strength of the relationship between the variables, a correlation test was employed. Therefore, Bivariate Pearson's correlations coefficient represents an effect size that is measured on a standard scale (between -1.0 and +1.0) (Field, 2013:274). Cohen (1988) provides guidelines for interpreting the correlation coefficients' effect size. These suggestions are only meant to be loose guidelines for researchers, as he merely derives his empirical guidelines from his (personal) experience with effect sizes and correlation coefficients. He uses three sizes: small ($r = 0.10$), medium ($r = 0.30$), or large ($r = 0.50$).

Table 7-2 presents the correlation coefficients, means, and standard deviations of the constructs. The results indicate positive and significant correlation coefficients between social media ($r(74) = 0.388$, $p<0.01$) and the distribution channels. Note that in parentheses is reported the degree of freedom (df) of the sample size (N) subtracted by the two variables (which is $N - 2$) (Cohen, 1988; American Psychological Association., 2010).

The findings also reported a positive and significant correlation between social media ($r(74) = 0.348$, $p<0.01$), distribution channels ($r(74) = 0.352$, $p<0.01$), and dynamic pricing.

The results exhibited in Table 7-2 show the positive and significant correlation between social media ($r(74) = 0.414$, $p<0.01$) and pricing techniques. Furthermore, they show a significant and positive correlation between distribution channels ($r(74) = 0.270$, $p<0.05$) and pricing techniques. Moreover, the results indicate that the relationship between dynamic pricing and the pricing techniques is not significant.

Table 7-2 summarizes the correlational measures of effect size that assess the degree of relation between the independent and dependent variables (Bornstein and Lamb, 2015:)

Table 7-2 Mean and Standard Deviation and the Inter-correlations Among the Variables

Construct (Factor)	Mean	SD	Social Media	Distribution Channel	Dynamic Pricing	Pricing Techniques
Social Media	5.2406	.856	1			
Distribution Channel	5.5022	.758	.388**	1		
Dynamic Pricing	6.0691	.602	.348**	.352**	1	
Pricing Techniques	5.1711	.838	.414**	.270*	.069	1

**. Correlation is significant at the 0.01 level (2-tailed).
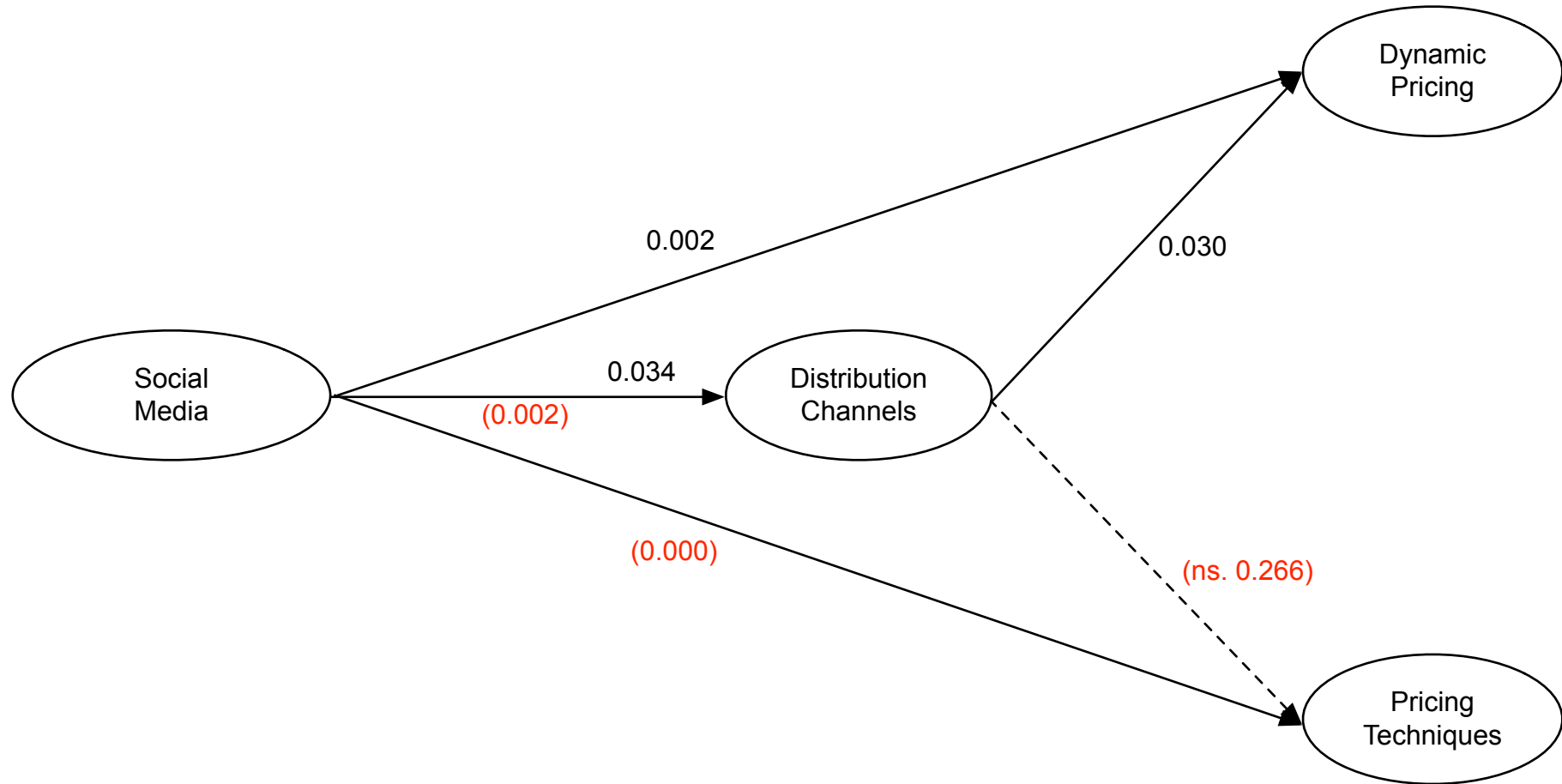*. Correlation is significant at the 0.05 level (2-tailed).

Source: Author

7.5   Results and Analysis

A multiple regression analysis with hierarchical methods of entry was performed to test the hypothesized relationships. The researcher has chosen the regression analysis because of sample size limitations (r=76) rather than a structural equation modelling (SEM). Hence, the independent variables are entered in two stages. First, the independent variables that we want to examine are entered into the regression. Second, the independent variables whose relationships we want to examine are entered after the controls. This research adopted social media as the independent variable and distribution channels as the dependent variable. According to Hair *et al*. (1998), the multiple regression analysis is utilized to test the hypothesized relationships between a single dependent variable and several independent variables. Therefore, the research followed the procedure proposed by Baron and Kenny (1986) on how to assess the degree and character of the relationships among the variables. It is about evaluating the change in the amount of variance explained (ΔR^2), testing the interaction effects, and conducting an overall incremental F test of statistical significance (Baron and Kenny, 1986; Tajeddini, 2015; Hair *et al.,* 1998:161). To test the relationships, the independent variable must firstly affect the control in the first equation. Second, the independent variable should have an impact on the dependent variable and, finally, the control variable should effect the dependent variable. In addition, a test of multicollinearity was employed. The variation inflation factor (VIF) was close to 1 for every variable that indicated no correlation among the independent variable and the remaining predictor variables (Hair *et al*., 1998).

Figure 7-3 illustrates the social media relationships with the hotel operational revenue management results of the hierarchical regression analysis.

Figure 7-3 The Social Media Relationships with RM and Path Coefficients

Social Media

Distribution Channels

Dynamic Pricing

Pricing Techniques

0.002

0.034
(0.002)

0.030

(0.000)

(ns. 0.266)

Model summary notes: Independent variables: *dynamic pricing, pricing techniques.* Dependent variables: *social media, distribution channels.*

Source: Author

7.5.1   Dynamic Pricing and Social Media

To examine the relationships that influence dynamic pricing decisions, when the hotels develop social media user content promotions, the researcher used the multiple regression analysis. In practice, hotels employ social media to enhance pricing promotion for consumers. The multiple regression analysis of the relationships between the main variables, namely social media, dynamic pricing, and distribution channels, were entered first as a block. This regression utilises dynamic pricing as the dependent variable. Table 7-3 presents the parameter summary based on the independent variables.

Table 7-3 Regression Analysis: Dynamic Pricing and the Relationship to Social Media

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.420	.177	.154	.55386

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.806	2	2.403	7.834	.001
	Residual	22.393	73	.307		
	Total	27.200	75			

Regression Model

Model	Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1 (Constant)	4.036	.521		7.743	.000		
Distribution Channel	.203	.091	.256	2.218	.030	.850	1.177
Social Media	.175	.081	.249	2.161	.034	.850	1.177

Dependent Variable: Dynamic Pricing

Source: Author

The regression model for social media implementation is:

Dynamic Pricing = α + β_1 Distribution Channels + β_2 Social Media

The ANOVA results show that overall the model predicted a significant relationship between the tactical components of revenue management that supplements and promotes pricing, which includes distribution channels as well as social media, and the dynamic pricing variance (Figure 7-3). The results indicate that the continued expansion of social media provides the hotel business with a new distribution channel as a revenue generator, resulting from an increasing level of consumer demand that can be leveraged to booking generation and improved occupancy. The results show the value of $F = 7.834$ with a level of significance of $p < 0.001$ (Table 7-3). Thus, Hypothesis two (2) is supported.

The results show a measure of the 'goodness of fit' of the estimated model, using the R^2 value, a fraction between 0.0 and 1.0. The value of R square in this analysis is 0.177, which means that almost 18 per cent of the revenue management optimization process, with a potential to impact consumer booking patterns are explained by the independent variable of tactical levels of revenue management strategy of distribution channels and social media. As previously mentioned, the researcher also employed a test of multicollinearity generating tolerance that is one minus the squared multiple correlation $(1 - R^2)$ of a given independent variable from other independent variables in the equation and variance inflation factor diagnostics (Cohen, *et al.,* 2003:680). The variation inflation factor (VIF) was close to 1 for every variable (Table 7-3). The VIF and the tolerance value for distribution channels (1.177; .850) and social media (1.177; .850) were respectively close to 1. This indicates that there is no correlation among the independent variable and the remaining dependent

variables. The VIF acceptance level is between 1 and 4 and the Tolerance is higher than 0.1. A score beyond 4 asks for further investigation, whilst the VIF maximum level of 10 is an indication of a serious collinearity problem and requires correction (Hair et al., 1998).

This research was conducted on the perceived approach that social media has an increasing role that might increase hotel market share by influencing consumer-purchasing patterns, which drive hotel performance. This major area related to revenue management implementation strategy attempts to influence pricing strategies, including distribution channel management and integrated social media promotions.

The results of this regression, presented in Table 7-3, confirm that distribution channels are positively related to the dynamic pricing strategies, with standardized coefficients of β=0.256, t-value=2.218, and p<0.05. They also show that social media is positively related to the dynamic pricing strategies, with standardized coefficients of β=0.249, t-value=2.161, and p<0.05.

From a tactical perspective, distribution channel management and dynamic pricing are considered as tools of revenue management strategies. These tools are creating a new consumer landscape based on purchasing behaviors with direct implications for hotel profitability that could be substantial. Technological innovation provides hotels with the prospect for a two-way, real-time communication with consumers, using social media. Hotels using social media, communicating short-term special offers, promotions, or consumer-generated content, such as reviews, to develop a promotional strategy, created incremental revenue with almost no incremental marketing expense. Being able to segment consumers is important to understand what drives purchasing behaviour and to motivate demand. Using social media platforms, hotels are

able to drive bookings, which becomes an important component to reducing incremental distribution costs. Revenue managers have to analyse the data and modeling behaviour sources, to make decisions, in order to improve outcomes needed to optimize revenue management outputs and to take advantage of social media trends. This real-time open content transparency, using social media, already creates a significant rate of information about consumer preferences, price qualifications, and consumer segmentation fences. Therefore, this behavioral data analysis reveals a correlation between social media and hotels' conversion rates (Anderson, 2012). The hotel industry has been transformed from using an inventory model RM approach to a consumer centric orientation, encompassing a shift to the use of distribution channels, and incorporating the rapid use of social media communication. This is consistent with the study findings showing a correlation, which might provide higher pricing transparency. Although not every hotel has the capability to dedicate resources and to measure how to drive significant promotional messages through specific social media platforms, the impact of social media towards distribution channels provides an opportunity to interact with the consumer, which then promotes a higher hotel performance. As a result, revenue management optimization should be flexible enough to accommodate and to take in account the purchasing trends, following consumer behaviour, to promote a convention response rate through various social media distribution channels. Therefore, these findings support the first (1) Hypothesis, in which we have hypothesized that there is a positive relationship between social media and the use of distribution channels use.

In addition, to further investigate the effects of the relationships between the notion of using social media and the tactical level of day-to-day manager

decisions on pricing, the researcher performed a simple main effects regression, using the hierarchical method of entry to interpret any interaction between dynamic pricing and social media usage, which increase the transparency of pricing and optimize hotel performance.

The result of the regression analysis on the interaction between social media and the dynamic pricing selling approach is shown in Table 7-4. The ANOVA results reveal a significant relationship between social media usage to promote pricing and the dynamic pricing variable with a value of F = 10.206 and a level of significance of $p<0.05$. The results indicate that there is a positively related, significant linear relationship between social media and the dynamic pricing method, with standardized coefficients of β=0.348, t-value=3.195, and $p<0.05$ (Table 7-4).

Table 7-4 Regression Analysis: Dynamic Pricing and Social Media

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.348	.121	.109	.56834

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.297	1	3.297	10.206	.002
	Residual	23.903	74	.323		
	Total	27.200	75			

Regression Model

Model	Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1 (Constant)	4.786	.407		11.767	.000		
Social Media	.245	.077	.348	3.195	.002	1.000	1.000

Dependent Variable: Dynamic Pricing

Source: Author

The results show that the value of R Square in this analysis is 0.121, which means that 12 per cent of the total variation in the company pricing methods of dynamic pricing variable is explained by the independent variable of the social media usage. Although the percentage of the response variable variation is low, it is expected that the R Squared value will be low as well. Hotels are using social media to develop a consumer centric approach, driving sales through the push of competitive prices, using social media as part of a short term selling strategy. However, the growth of social media use has not necessarily improved the trust between the main stakeholders, meaning consumers, and hotels, resulting from enhancing a positive competitive price transparency. Hence, hotels can be leveraged using the data to encourage competitive pricing on the basis of mutual trust. The scatter of data points around the line of regression is .56. The variation inflation factor (VIF) and the tolerance value for the social media promotional strategy are 1.000; 1.000 respectively. That indicates that there is no correlation between the independent variable and the remaining dependent variables (Table 7-4).

Therefore, these findings support the fourth (4a) Hypothesis, in which we have hypothesized that there is a positive relationship between social media and the dynamic pricing use.

7.5.2   Traditional Pricing Techniques and Social Media

As the consumers' channel choice continues to rise, through an increasing range of Internet systems to improve the offered pricing capabilities, alternative modes of pricing and revenue management optimization have been introduced. However, contrary to expectations, the reality has been quite different. Many hotels are beginning to struggle because of the pricing complexity and

magnitude of pricing decisions. Hence, they continue their room pricing, using the traditional approaches to pricing models based on cost plus and market based pricing. Phillips (2005) remarks that most companies are not 'purists' and that in practice they are adopting different pricing techniques according to the time and the market challenges, in order to explore ways to maximize their returns. This pricing optimization incorporates consumer willingness to pay, costs, and the competitive environment as key elements. Table 7-5 presents the parameters' summary based on the independent variables.

Table 7-5 Regression Analysis: Traditional Pricing Techniques and Social Media

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.414[a]	.171	.160	.76881

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.037	1	9.037	15.290	.000
	Residual	43.739	74	.591		
	Total	52.776	75			

Regression Model

Model	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1 (Constant)	3.047	.550		5.538	.000		
Social Media	.405	.104	.414	3.910	.000	1.000	1.000

Dependent Variable: Pricing Techniques

Source: Author

The ANOVA results show a significant relationship between social media use to promote pricing and the pricing techniques variable with a value of F = 15.290 and a level of significance of p < 0.001. The results indicate that there is a positively related, significant linear relationship between social media pricing promotions and pricing techniques, with standardized coefficients of β=0.414, t-value=3.910, and p<0.001 (Table 7-5). Moreover, the value of R Square in this analysis is 0.171, which means that 17 per cent of the total variation in the hotel pricing optimization techniques variable are explained by the independent variable of the social media usage. The variation inflation factor (VIF) and the tolerance value for the revenue management incentive metrics are 1.000; 1.000 respectively. That indicates that there is no correlation between the independent variable and the remaining dependent variables (Table 7-5).

Nowadays, the challenge of revenue managers is to find out how to build profitable strategies and drive significant revenue improvement, using social media. However, without any compromises, offering lower prices for hotels rooms than expected. Although, the study results shown a positive relationship between social media and traditional pricing techniques, with the current evolution of the Internet and the constantly changing consumer behaviour, in an environment of available data, being able to compute prices without any consideration of the consumer's willingness to pay, is obviously challenging at this point and affects the hotels' promoting product segmentation. The drawback of the traditional pricing techniques is that they concentrate calculating prices strictly on 'costs' plus a surcharge (margin) or on how the competition sets up their offers. The advantage of consumers having easy access to the prices themselves does not take into account the capacity of appealing to different consumer segments, by offering different prices.

Therefore, pricing strategic objectives, should focus on a multichannel implementation of pricing techniques, in order to yield results that accommodate consumer behaviour trends. Thus, social media usage provides a significant platform for the implementation of pricing strategies. Hence, Hypothesis 4b is supported.

Finally, the researcher examined if there is a positive relationship between the pricing techniques and how hotels integrate social media as distribution channel selling mechanism. He performed a multiple regression, using the hierarchical method of entry, to interpret any interaction between the variables. The result of the regression analysis of the interaction between the traditional pricing techniques and the operational level components of online distribution is shown in Table 7-6. The ANOVA results reveal a significant relationship between the variables, with a value of $F = 8.299$ and a level of significance of $p < 0.001$.

The results show that the value of R Square in this analysis is 0.185, which means that 18.50 per cent of the total variation of the hotel pricing techniques variable is explained by the independent variables of the distribution channels and the social media use.

The relatively low R^2 value indicates that there exist relationships between the traditional pricing techniques and the distribution channels, as well as social media. However, although social media has a significant, through indirect effect on pricing, the relatively low relationship relates that the traditional pricing techniques are based on a 'cost' control approach and not on a fresh and engaging approach that generates incremental revenue through consumer demand to reach the consumer's willingness to pay. The scatter of data points around the line of regression is 0.76749. The variation inflation factor (VIF) and the tolerance value for distribution channels (1.177; .850), as well as the social

media (1.177; .850) respectively are all close to 1. That indicates that there is no correlation between the independent variable and the remaining dependent variables (Table 7-6).

Table 7-6 Regression Analysis: Traditional Pricing Techniques and the Relationship to Social Media

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.430	.185	.163	.76749

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.776	2	4.888	8.299	.001
	Residual	43.000	73	.589		
	Total	52.776	75			

Regression Model

		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	2.522	.722		3.492	.001		
	Distribution Channel	.142	.127	.128	1.120	.266	.850	1.177
	Social Media	.356	.112	.364	3.176	.002	.850	1.177

Dependent Variable: Pricing Techniques

Source: Author

In addition, the results of this regression, presented in Table 7-6, confirm that the use of social media is positively related to the traditional pricing techniques, with standardized coefficients of β=0.364, t-value=3.176, and $p<0.05$. As Table 7-6 shows, one path was found not to be statistically significant. It is the

distribution channel path that is not positively related to the traditional pricing techniques with p=0.286.

Thus, Hypothesis three (3) is partially supported. We have hypothesized that there is a positive relationship between distribution channels and traditional pricing approaches when a revenue manager uses social media to promote sales based on different other pricing approaches.

Table 7-7 presents a summary of the results of the regression analysis of the use of social media as a promotional tool and associates relationships of distribution channels and different pricing approaches.

Table 7-7 Summary Results of Regression Analyses

Dependent Variable:	Dynamic Pricing					Multicollinerality		
Model and Variables Independent Variables		Beta	t-value	Significant t	Std. Error	VIF	Tolerance	Results
Distribution Channel		.256	2.218	.030	.091	1.177	.850	H1 supported
Social Media		.249	2.161	.034	.175	1.177	.850	H2 supported
Overall F	7.834							
p-value	.001							
R^2	.177							
Adjusted R^2	.154							
Social Media		.348	3.195	.002	.077	1.000	1.000	H4a supported
Overall F	10.206							
p-value	.002							
R^2	.121							
Adjusted R^2	.109							

Continued

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Table 7-7 Summary Results of Regression Analyses (continued)

Dependent Variable:	Traditional Pricing Techniques					Multicollinerality		
Model and Variables								
Independent Variables		Beta	t-value	Significant t	Std. Error	VIF	Tolerance	Results
Distribution Channel		.128	1.120	.266	.127	1.177	.850	
Social Media		.364	3.176	.002	.112	1.177	.850	H3 supported / Partially
Overall F	8.299							
p-value	.001							
R^2	.185							
Adjusted R^2	.163							
Social Media		.414	3.910	.000	.104	1.000	1.000	H4b supported
Overall F	15.290							
p-value	.000							
R^2	.171							
Adjusted R^2	.160							

Source: Author

7.6 Summary

The purpose of this research was to examine the effect of social media as a distribution channel that motivates the implementation of revenue management strategies. The adoption of social media as a strategic tool evolves consumer behaviour and impacts demand. Accordingly, social media elucidates an important role in consumer-generated content, initiated by online hotel information searches (Xiang and Gretzel, 2010). This research highlights the fact that, in terms of importance for online sales, hoteliers perceived a direct relationship between OTAs and social media, where the latter has a stronger effect on the importance of OTAs than OTAs have on the importance of social media. The perception of the importance of social media and OTAs for online sales further varies according to several other factors, which, interestingly, are different across the two investigated variables.

The development of the Internet has created new ways of communication between companies and consumers. These changes in technology have enhanced the consumer behaviour and the travel experience. However, social media is currently the source of online application that affects and creates challenges for revenue managers. The basic challenge is to know the consumer. Using social media, consumers become more sophisticated as they can always be aware of hotel promotions and unique sales opportunities, which they can compare before the purchase or wait and speculate on lower prices. This constantly changing environment creates the importance for hotels to incorporate social media in their hotel revenue management and pricing strategies. This implementation forms an innovative way of providing access to a distribution channel, which creates a direct consumer centric relationship and

can develop marketing strategies to help hotels to distribute dynamic pricing features and promotions.

In this study, the researcher has presented different relationships when practicing different pricing approaches, using social media as a distribution channel in the current online environment. From a hotel's perspective, the evolution of the Internet has brought a pricing transparency. This could be identified as a direct impact of social media, allowing both stakeholders to create an unofficial, strong relationship, ensuring that consumer expectations are priced appropriately to drive revenue generation.

The study's data was collected through an online survey to test the hypothesized model. The results of ANOVA indicate that revenue generating campaigns, using social media, are more effective when implementing mainly dynamic pricing over other pricing techniques. Hypotheses 1, 2, 3, partially 4a, and 4b were positively supported by the results.

The findings of this study support the hypothesis regarding the relationship between social media and distribution channels. This research was conducted on the assumption that social media, as a technological innovation, has a favourable effect on distribution. It is important for hotels to evaluate the newly created dimension to implement and develop social media promotional strategies communicating in real time distressed inventory, special offers, and promotions that might generate incremental revenue with minimum incremental cost. Moreover, to promote beyond rooms, with ancillary sales of additional sources, may very well be a contribution that might possibly represent a significant source of revenue. Social media provides the channel to distribute

and optimize ancillary products or services by helping managers understand what each consumer might expect to purchase.

The hypothesis is supported by showing that there is a positive relationship between distribution channels and dynamic pricing strategies, when a revenue manager uses social media to promote dynamic pricing offers. The results indicate that, from a tactical perspective, the continued expansion of social media presents a tool for revenue generation. Hotel promotions, based on consumer purchasing behaviour, triggered by social media marketing outcome attitude toward booking intention resulting from dynamic pricing strategies. Hotels using social media demonstrated positive results in regards to the increasing level of consumer demand, which can potentially leverage a hotel's booking generation and improve occupancy.

In addition, the findings of this research confirm a relationship between the distribution channels and different pricing approaches when a revenue manager uses social media to promote sales based on traditional pricing techniques. However, this relationship has only been partially confirmed. This is mainly because hotels are beginning to struggle, due to the dynamic pricing complexity and the magnitude of pricing decisions. Hence, they continue their room pricing, using the traditional approaches to pricing models, based on cost plus and market based pricing. The drawback of the traditional pricing techniques is that they do not take into account the capability of appealing to different consumer segments by offering different prices.

This study also discusses the direct effect that social media may have on price strategies. The findings confirmed the direct relationship between social media, dynamic pricing, and traditional pricing techniques. From an applied

perspective, hotels develop consumer centric strategies, pushing competitive prices, using social media as an important tool to influence consumers to book hotel rooms.

In practice, the results of this research provide significant, indirect suggestions for hotel managers. First, the study identified positive relationships between social media and distribution channels, indicating that hotels should concentrate on social media implementation to improve their revenue management targets. Second, hotel managers, considering social media as a distribution channel, may offer promotions based on a dynamic pricing approach, using consumer-generated content to impact the consumer's sensitivity to pricing. Therefore, social media provides the platform to promote tactical revenue management strategies and to practice differential pricing motives that enhance the hotel's value proposition and develop prices that consumers are willing to pay. Moreover, hotel managers might employ social media to push promotions to specific consumer segments, directly targeting a specific group of consumers. Lastly, according to the results of this study, social media are not promoting traditional pricing techniques. More specifically, traditional pricing techniques, such as cost-plus pricing, also known as mark-up pricing, do not take sufficient advantage of the changing market environment, as they are insensitive to the market's elasticity of demand for the hotel products. Hotel managers are facing challenges in positioning against completion exposed by the cost driven pricing, as they do not have sufficient information about the demand that influences total revenue and costs. Hence, they might overprice or under-price the rooms. The real time communication associated with the growth of the online environment establishes an important impact, due to social networking.

To summarize, hotels need an integrated presence across the various distribution channels. Also, in order to determine appropriate pricing, hotels should take a holistic approach on how to recognize a variety of key elements to segment and capture consumer demand.

8 CONCLUSION

8.1 Introduction

This chapter summarizes the main findings of the study. The results of the research were presented and discussed in detail in chapters five, six, and seven. This study has discussed and analysed the levels of revenue management (strategic and tactical) and the importance of pricing strategies, by empirically testing the impact of dynamic pricing and alternative pricing methods on the consumers' willingness to pay. Pricing is both, an important corporate function and a field of academic study and will, within the role of revenue management, remain a distinctive strategical advantage to the day-to-day hotel operation and effective revenue optimization. Some of this study's findings confirmed the empirical implementation of revenue management strategies in a hospitality online environment while other findings in this study appear to contradict the findings of previous studies.

This research combines both, hotel industry knowledge and academic research in this area, to provide both, practitioners and researchers, with a broad view and complete picture of revenue management implementation within the industry. The study contributes to the literature identifying the impact of pricing on consumers' attitude and motivation toward hotel booking. The researcher has developed an expanded revenue management framework to motivate and demonstrate the relationships between the different elements of revenue management on the hotel online marketplace and a consumer level analysis. He tested the framework directly to the individual consumers and within the hotel industry using performance measures. Moreover, the research limitations are explained and future research recommendations are suggested.

8.2 Discussion of the Research Findings

Revenue management was successfully implemented as a decision management tool to optimize consumers' purchasing behaviour in many industries, from airlines, to energy and from car rentals, to broadcasting. The purpose of this study was to (a) provide a better understanding of the consumers' willingness to pay (WTP) and their behaviour using the name-your-own-price model to book a hotel room, (b) examine the rationality between the implementation of pricing approaches and the impact on the consumer in an online environment, and (c) explore the motivational factors that determine the consumer's adoption of social media and the implementation on the hotel revenue management operational level and pricing strategies as a distribution channel.

This research is motivated by the empirical work of the researcher. Moreover, this study contributes to the literature on revenue management implementation, as it examines the different levels of RM. The research highlights the multi-level interrelations between the final consumer behaviour, the online travel environment, and the hotel operation. To examine the above theoretical and empirical contribution, seven research objectives and a number of questions and hypotheses were tested in three studies (Table 1-2). It represents a typical applied day-to-day work around of tactical decisions to maximise the profit, using the limited number of rooms, different market segments, pricing, and distribution channels. Talluri and van Ryzin (2004:4) simplified the revenue management levels and differentiated between quantity-based and price-based RM. According to the point of view, companies manage demand using room inventory or prices as a tactical tool. In contrast, Boyd and Bilegan (2003) emphasized that inventory management and pricing are related and that if the

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products are similar then the problems are equivalent. Figure 8-1 illustrates the established revenue management levels of decision proposed by Talluri and van Ryzin (2004).

Figure 8-1 Established Revenue Management Levels

Revenue Management

Quantity – based RM
- Capacity Control
- Overbooking

Price – based RM
- Dynamic Pricing
- Auctions
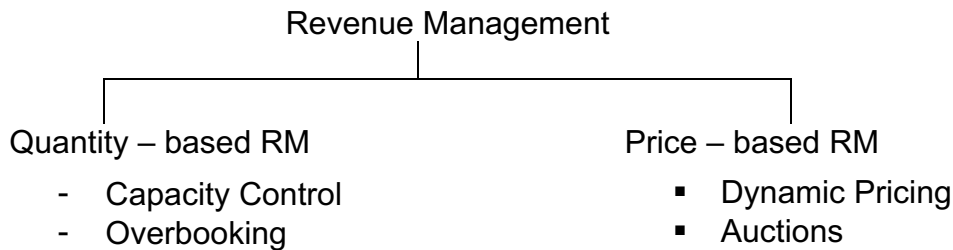
Source: Author – adapted from Talluri & van Ryzin (2004:4)

Based on the divergent structures depending on which control variable is used, proposed above, this research proposes an expanded revenue management relationship of decision model (Figure 8-2). This model provides an empirical application of revenue management and the key relationships between some elements, namely the travel product rates and the service offerings.

The structure of that model considers revenue management operational functions applied i.e. willingness to pay, and dynamic pricing, within the online environment as a distribution channel. It is focused on the relationship between consumer's perception strategically decides to accept or reject a set of controls and the implementation of revenue management allowing the dynamically policy changes.

In particular, the relationships within the proposed empirical model demonstrate (a) the relationships between the operational revenue management levels, the extent and the usage and success of those methodologies in the hospitality industry, based on challenges faced by each of the stakeholder groups i.e.

consumer's and hotel's operation, the impact of dynamic pricing and alternative pricing techniques on a hotel's performance (Chapter 6), (b) the consumer's perception and acceptance of the Name-Your-Own-Price (NYOP) model as part of the RM operational levels (Chapter 5), and (c) the relationships between the operational revenue management levels and social media, used as a distribution channel (Chapter 7).

Figure 8-2 Proposed RM Framework - Expanded RM Levels of Decision
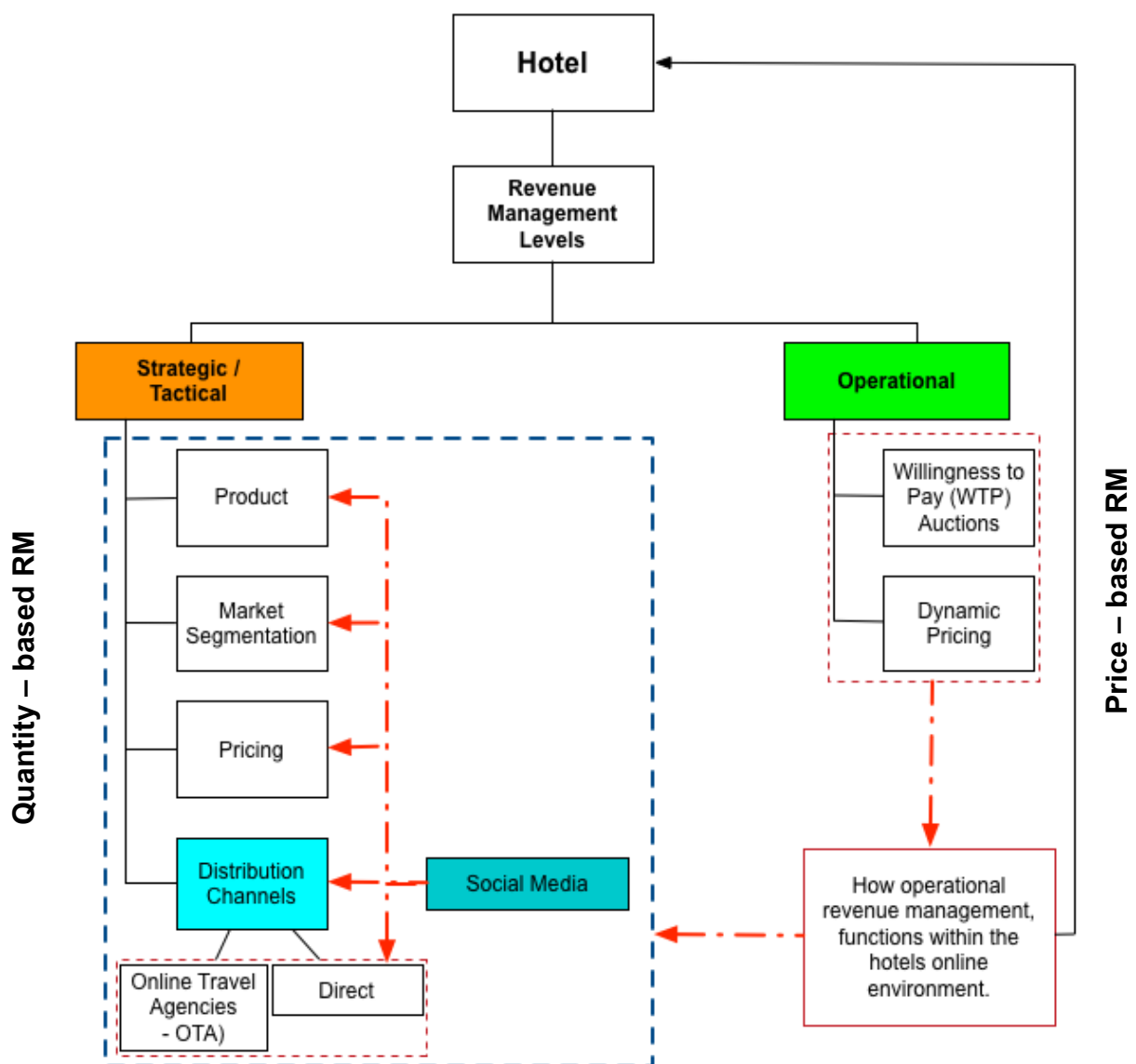
Source: Author

Table 8-1 to 8-3 presents a summary of the relationship between the research objectives, research question, and the hypothesized paths.
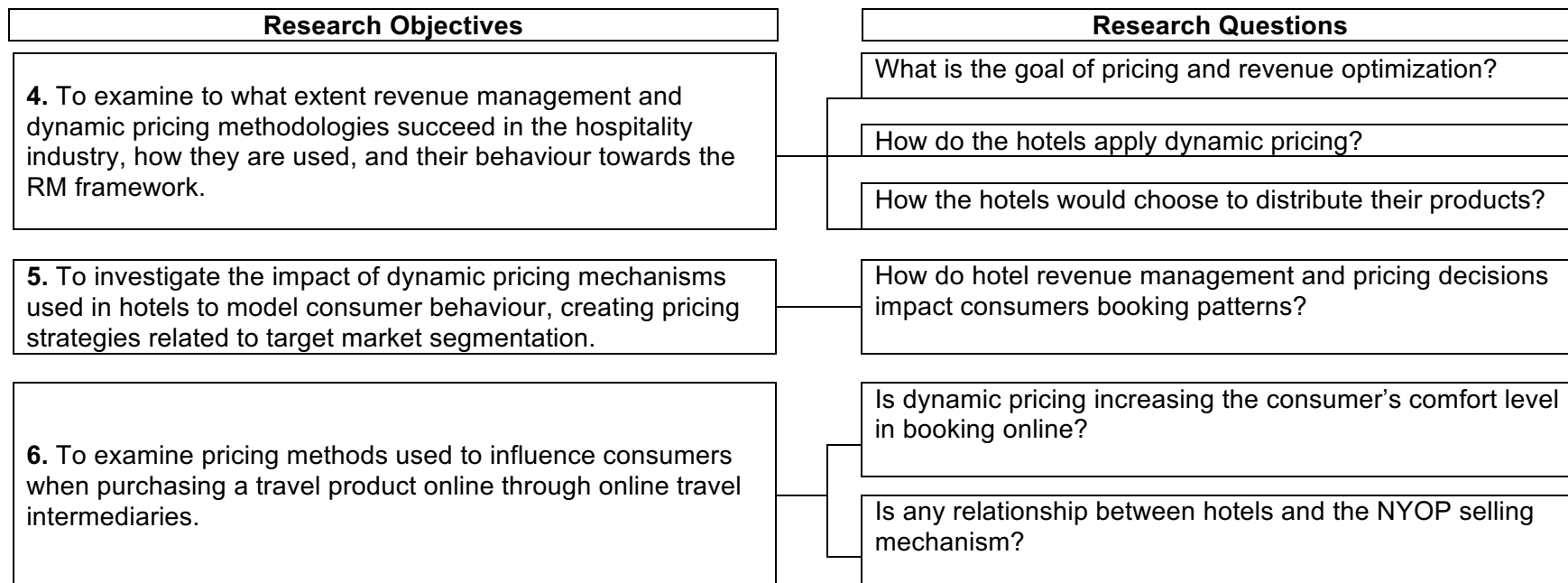
Table 8-1 Summary relationship of research objectives, questions, and studies hypotheses in study one

Research Objectives	Research Questions	Hypothesised Relationships	Results
1. To examine consumer's behavioural intentions on their willingness to pay (WTP) when using the NYOP method to book a hotel room.	What is the overall experience using a customized pricing? (reverse auction) What demographic characteristics influence consumers' purchase behaviour through the NYOP model.	**H6:** Consumer motivation have a positive influence on purchase intention to use the NYOP model.	Supported
		H7a,b,c: There is a significant positive relationship between frequency toward the use of the NYOP model and consumer motivation.	H7a, b Supported H7c Rejected
		H8a,b,c: There is a significant positive relationship between frequency toward the use of the NYOP model and consumer purchase intention.	Supported
2. To examine the extent of different perceptions, using the NYOP model, its influence on consumers' overall satisfaction and confidence when they purchase travel products. Examine how price factors, reference prices, and the number of bids reflect on utilizing the NYOP model.	What is the overall satisfaction gained from using the NYOP model? Is it profitable to restrict consumers to a single bid?	**H1:** Satisfaction have a significant positive influence on a consumer motivation to use the NYOP.	Deleted
		H2: Confidence have a significant positive influence on a consumer motivation to use the NYOP.	Supported
		H3: Experience have a significant influence on a consumer motivation on using the NYOP.	Deleted
		H4: Price bargain have a significant influence on a consumer motivation on using the NYOP.	Deleted
		H9: There is a significant positive relationship between price monetary benefits toward the consumer motivation to purchase through the NYOP model.	Supported

Continued

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Research Objectives	Research Questions	Hypothesised Relationships	Results
3. To examine whether or not the availability of posted reference prices impacts on consumer's booking pattern when using the NYOP model.	What benefits and drawbacks do the companies see using the NYOP model?	**H5a:** When bids are rejected negative emotions have a significant influence on a consumer motivation to use the NYOP model.	Rejected
	What is the optimal price cutoff in a given scenario?	**H5b:** Negative emotions have a significant influence on purchase intention to use the NYOP model.	Rejected

Table 8-2 Summary relationship of research objectives and questions in study two

Research Objectives	Research Questions
4. To examine to what extent revenue management and dynamic pricing methodologies succeed in the hospitality industry, how they are used, and their behaviour towards the RM framework.	What is the goal of pricing and revenue optimization?
	How do the hotels apply dynamic pricing?
	How the hotels would choose to distribute their products?
5. To investigate the impact of dynamic pricing mechanisms used in hotels to model consumer behaviour, creating pricing strategies related to target market segmentation.	How do hotel revenue management and pricing decisions impact consumers booking patterns?
6. To examine pricing methods used to influence consumers when purchasing a travel product online through online travel intermediaries.	Is dynamic pricing increasing the consumer's comfort level in booking online?
	Is any relationship between hotels and the NYOP selling mechanism?

Continued

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Table 8-3 Summary relationship of research objectives, questions, and studies hypotheses in study three

Research Objectives	Research Questions	Hypothesised Relationships	Results
7. To examine the relationships, how social media used as a distribution channel to encourage consumers to utilize direct bookings through pricing techniques. How this impact revenue strategies and profitability.	How do consumer plan and consume holidays use social media?	**H1:** There is a positive relationship between social media towards distribution channels use.	Supported
		H2: There is a positive relationship between distribution channels and dynamic pricing strategies when a revenue manager uses social media to promote dynamic pricing offers.	Supported
	What is the relationship between social media and dynamic pricing?	**H3:** There is a positive relationship between distribution channels and different pricing approaches when a revenue manager uses social media to promote sales based on different other pricing approaches.	Supported / Partially
		H4a: There is a direct relationship between social media and dynamic pricing.	Supported
	Is any relationship between SM and alternative pricing methods?	**H4b:** There is a direct relationship between social media and pricing techniques.	Supported

Source: Author

8.2.1   Study One – Name-Your-Own-Price Model (NYOP)

The study of the name-your-own-price model examined the consumers' perceptions and the intention of purchasing online travel products through the specific selling model. Therefore, its purpose was to provide answers in regards to the exposure and acceptance of the NYOP model. The results' statistical analysis (a) provide a better understanding of consumers' willingness to pay (WTP) and their behaviour using the name-your-own-price model, (b) examine the influence on consumers' overall satisfaction, (c) examine consumers' confidence in using the NYOP approach, and (d) examine the effect of posted reference prices availability on the consumer's purchase intentions and the impact on their booking pattern when using the NYOP model.

For this study, the greater participation rate came from males (54.4%). The majority of the respondents were 30 years or younger and 31 to 40 years old. In terms of education, the respondents came from various academic backgrounds, mainly holding a Bachelor's or a graduate degree. Moreover, a significant percentage held a managerial or a professional position. This is consistent with the results based on the work of Shapiro and Shi (2008), stating that the NYOP model has a significant impact on price sensitive consumers with a certain level of travel flexibility. The research findings similarly reported that consumers occupying a directorship or higher position are not users of the model, mainly because of the requested booking fences and flexibility. Moreover, it appears from the findings that consumers using the model have a moderate-income level. Finally, the respondents' user's profiles show that the majority of them live in the United States, which was to be expected, as the model firstly pioneered in the USA. This complement the academic literature (Spann *et al.*, 2004;

Anderson and Wilson, 2011) as validates the consumers' willingness to pay price for a substantial purchase deal based on personal purchase flexibility, which the model promotes through booking fences and restrictions, meaning that confirmed reservations are not refundable and not changeable (as required by European law).

Concerning the consumer experience when using the NYOP model, the majority of the respondents was experienced and had frequently used a NYOP model website to purchase travel products or services. Most of the respondents (58.6%) claimed that they use the model at least once a year, if not several times a year.

In addition, the study scenario revealed that the average price range fell in the interval of $100 to $125 (M=$112.5), which is almost 44% lower than the OTA rate, and 31% (141) of the respondents provided a price range from $126 to $150 (M=$138), which is almost 31% lower than the provided OTA rate. The above results were expected because consumers are using the NYOP model due to the expected substantial price reductions. However, we have to note that in order to achieve such significant rate reductions, the consumer's buying decisions are associated with booking restrictions (Shapiro and Shi, 2008; Talluri and van Ryzin, 2004:521).

Within this study, three objectives have been addressed, examining the antecedents of the consumer purchase behaviour within certain dynamic relationships.

The first objective was to examine consumer's behavioural intentions and their willingness to pay (WTP) when using the NYOP method to book a hotel room. The study findings support prior research and are consistent with

the observation that perceived monetary benefits from prices influence consumers significantly in terms of their purchase intentions of using the NYOP model (Nagle and Holden, 2002; Talluri and van Ryzin, 2004). The value function classifies behavioural intentions and provides new insights as to how the cognitive component of prices with monetary benefits independently correlate with consumer characteristics and variables (Thaler, 1985). It provides clear evidence that price monetary benefits are significantly related to purchase intentions (β = .84; p < .001). Perceived price benefits are positively associated with a consumer's satisfaction with the purchase of travel products and influences consumer motivation (β = .54; p < .001) for using the NYOP model. In return, this motivation has a significant influence on the consumer purchase intention (Blythe, 2013:18) to use the NYOP model to book a hotel. Hence, the consumer will perceive a major price benefit. This feature reflects the fact that consumers feel satisfied using the NYOP model and with the product choice and hotel quality. Moreover, consumers feel that they have obtained better prices using the NYOP model as opposed to using other online travel agencies. Therefore, these results are suggestive of the previous work and hospitality managers should cautiously take into consideration the consumer's perception of price, when developing pricing strategies. The consumer may convince the seller of a false willingness to pay and may threaten the seller's profit (Hann, Hinz, and Spann, 2006) before accepting their offer through the NYOP model. Unlike the earlier studies, the current results are contrary to the findings of the work of Huang and Sosic (2009) who found that high-end consumers might demonstrate low-end behaviour. In practice, using a bidding model (WTP), this argument is not applicable because of the uncertainty regarding confirmation details and restrictions on cancellation policies and cannot influence the WTP

directly (Shapiro and Shi, 2008; Talluri and van Ryzin, 2004; Huang, 2011). Similarly, this study confirms the argument that the NYOP mechanism is designed to considerably attract low value consumers and price sensitive consumers. The researcher found that the price monetary benefits demonstrate positive and significant relationships between income and motivation and purchase intention and price monetary benefits ($\beta_{incomePMB \rightarrow MO}$ = .07; p<.001; $\beta_{incomePMB \rightarrow Pint}$ = -.03; p<.05). Using this information about the NYOP model in the marketplace provides a tool for the pricing manager to develop pricing and promotional strategies. The rationale behind this is supported by the work of Spann *et al.,* (2004), which states that the understanding of consumer behaviour, purchase intention, and monetary benefits serves the pricing manager in evaluating optimal pricing structures and in obtaining higher consumer surplus.

The second objective of the current study was to examine the extent of different perceptions, using the NYOP model and its influence on consumers' overall satisfaction and confidence when they purchase travel products. It examines how different external factors reflect on consumers' judgement of the value of purchases, using the NYOP model.

This objective contributes to the literature with respect to consumer confidence purchasing services that represents the cognitive component and the consumers' comfort with using the NYOP model. It can be derived that this effectively influences motivation and purchase intentions of booking a hotel room. The results of the current study indicate that confidence had a positive and significant main effect on motivation (β = .69; p < .001) and a significant positive relationship with the consumer purchase intention (β = .66; p < .001).

Specifically, the findings provide the insight that consumers feel confident using the model because the confirmed prices were in accordance with their willingness to pay. Sometimes, the confirmed price was even lower than expected. This is similar to prior research results that reinforce the conceptual argument that the consumer confirms the reservation only if they feel the offered price is according to their willingness to pay and that they are eligible to a reasonable price (Bodea and Ferguson, 2014:217; Talluri and van Ryzin, 2004). In addition, the current study findings report that consumers are more confident in using the NYOP model, as they are aware that the model requires flexibility regarding the location and cancellation policies. Moreover, due to the specific model characteristics of the findings regarding consumer confidence, it confirms the work of Suter and Hardesty (2005) considering consumer perceptions of price fairness of NYOP model sellers. It indicates that higher starting threshold bids might result in the consumers' perception of price unfairness with the final effect of losing potential consumers. The current study failed to introduce a significant correlation between satisfaction and consumer perceptions when using the NYOP model. This contradicts the findings of previous works that shown a relationship to consumer satisfaction and perceived revenue management practices as unfair (Kimes, 1994; El Haddad, Roper, and Jones 2008). On the other hand, when consumers creating a bidding lead they are aware of the non-purchase regret and model limitations. Nevertheless, this construct has been combined with price monetary benefits. There is a positive relationship between the motivation and the perception of a major price benefit, which influences purchase intention. However, the study indicates that consumers feel more confident in their willingness to pay (WTP) when reference prices are available. An implication is that the consumer is

mainly restricted to a single bid within a certain period of time, which varies according to the NYOP provider (Terwiesch *et al.,* 2005; Spann *et al.,* 2004). Finally, the current study assessed the moderating effect of frequency on the impact of consumer motivation to use the NYOP model, which influences the purchase intention of booking a hotel room. Based on the theory, frequency (FRQ_All) moderates the effects of confidence (CON) on motivation ($\beta_{CONFRQ\_All \rightarrow MO}$ = .07; *p* < .001) and consumer purchase intention ($\beta_{CONFRQ\_All \rightarrow Pint}$ = .64; *p* < .001) (Table 5-20). The results indicate significant relationships between frequency and confidence and between consumer motivation and purchase intention to use the NYOP model. This direct impact of confidence on frequency is perceived because consumers are confident in their expectations when using the NYOP model.

The third objective of the current study was to examine whether or not the availability of posted reference prices impacts a consumer's booking pattern when using the NYOP model.

When a consumer uses the NYOP model, two emotional components, the constructs of consumer's positive and negative emotions, play an important role in considering the actual bid to be submitted. Chernev (2003) states that consumers prefer a price selection list with reference prices to be available. Considering prospect theory (Özer and Zheng, 2012) consumers relied on the evaluation of the gain or losses compared to the reference point, in this case a third party provider (OTA), using the NYOP mechanism. The dynamic nature of the NYOP model pricing approach affects the consumer behaviour emotionally. The results of the current study show that the negative emotions construct was not statistically significant for creating motivation (*β* = .04; *p* = .145) and

intention to purchase, using the NYOP model (β = -.08; p = .387). This finding indicates that consumers' feelings about the outcome of the decision on whether to use the NYOP model or reference prices was mainly influenced by other factors. The results show that the negative outcome was, on average, lower on consumer purchase intention, when using the NYOP model, than on consumer motivation. This is contradictory to previous studies (Özer and Zheng, 2012). However, it is in agreement with the study by Ding *et al.,* (2005). The study concluded that there is a strong emotional effect associated with the bidding and the expectations, according to previous bidding results. Hence, consumers felt uncomfortable using a bid approach to book a hotel room. Since the NYOP model procedure is based on uncertainty, consumers evaluate the outcome of gain or loss in comparing with a reference point. The more confident and comfortable they feel, the more there is a notable correlation between the decision making and the final purchasing outcome. The interaction term for income was statistically significant ($\beta_{incomeNEmotions \rightarrow MO}$ = .10; p = .024). This indicates that the construct differs across the control variables (Table 5-15). In fact, that means that the subject income generates no regret (negative emotion) for the consumer using the NYOP model. The outcome can be supported with the explanation that the model is mainly concentrated on price sensitive consumers with a low income. The competitive dynamic environment can have an influence on a consumer's future bidding behaviour, which induces their purchase intention. The results show that the findings contradict frequency split into periods that reported no significant between negative emotions and motivation, and purchase intention to general frequency that reported significant between all variables, indicating the moderating effect of frequency.

The current study has implications for consumers' perceptions, as to how consumers react to the value proposition of the offered product or service. As consumers make purchase decisions in a dynamic, changing online environment, the reference prices serve as a static tool to help select appropriate services based on prices of certain products. This creates confidence that contributes to the motivation factor in the different stages of the decision-making process related to a purchase.

8.2.2   Study Two – Pricing Approaches in Hotels

Revenue management and pricing as a core strategic, long or short term function have a critical role to play in day-to-day hotel operations and in the initiative maximisation. Prices fluctuate daily and hotels focus on optimization in order to become competitive and to sustain a competitive advantage as an operational tool to enhance their efficiency and profitability. Unlike the other studies, which concentrate on optimization models and forecasting, the current study, contributes to both, the practitioners' and the academics' view, examining the performance metrics and tactics required beyond the inventory control strategies, from a total hotel's perspective, to establish demand approaches. The researcher performed a multiple regression analysis with hierarchical methods of entry to test the relationships.

This second study explains the fourth, fifth, and sixth objectives of the research. In more specified detail, **the fourth objective examines the extent to which revenue management and the dynamic pricing methodologies succeed in the hospitality industry; how they are used; and their behaviour towards the RM framework.**

As identified by Talluri and van Ryzin (2004), revenue management can be expanded on two levels, the price-based and the quantity-based level. The former provides pricing approaches such as demand based pricing (dynamic pricing) and alternative pricing approaches (willingness to pay) and the latter the development of inventory and an overbooking control. The researcher based his research on this framework and contributed to the literature and current practices by expanding the levels and including the online environment in the classification of distribution channels. More specifically, when selling their rooms, hotels use a variety of distribution channels. Therefore, it is critical to determine the most efficient distribution channel (Kimes, 1994). A better room allocation through distribution channels and pricing decisions can have a significant impact on revenue maximisation. In practice, the management of third party suppliers or direct sales through a hotel's sales alternatives creates a new dynamic in the marketplace with both, opportunities and problems, and plays an important role within revenue management implementation strategies. The results show that the distribution channel path is not positively related to generic pricing methods with p=0.686. This is consistent with the study of O'Connor and Murphy (2008) that states that internet distribution channels create extra challenges for hotels because of their cost structure. Hotels dealing with various market conditions and in response to supply and demand must manipulate the use and portfolio of the distribution channels (O'Connor and Frew, 2002). This is feasible because the online distribution channels, such as online travel agencies, offer hotels extra services, thus providing them information in the mode of aggregate data related to their competitions' pricing. Therefore, customization of purchase intentions has been widely adopted by the industry. The emerge of the Internet has facilitated new opportunities, providing

consumers with unprecedented price visibility, empowered by the variety of ease shopping on the online travel market (Phillips, 2005; O'Connor and Frew, 2002) contributed with the social media growth which has improved the consumer real-time responsiveness and added an extra complexity to the distribution environment. The concept of a consumer price strategy that manifests selling prices incorporates the estimated distribution channel costs into the selling price because the cost range will differ among the different channels.

In addition, the results show a significant relationship between the different components of the tactical levels of revenue management, which are competition, social media, as well as dynamic pricing, and the pricing methods variance. The results indicate a value of $F = 9.520$ with a level of significance of $p < 0.001$ (Table 6-22). The results of this regression confirm that competition is positively related to the pricing optimization methods, with standardized coefficients of $\beta=0.277$, t-value=2.331, and $p<0.05$. Across all the industries, companies design competitive strategies in order to overwhelm the rivals. The hospitality market environment with its competitive dynamics fluctuates, using every available resource and counterstrategy for a series of actions, in response to the aggressive competition, in order to enhance market share, seeking market domination, focused on profitability improvement (Enz, 2010:191). Additionally, the results show that social media is positively related to the pricing optimization methods, with standardized coefficients of $\beta=0.458$, t-value=4.180, and $p<0.001$. The advantage of the Internet has created a rate transparency and has increased consumer exposure to real-time approaches, such as mobile bookings through brand sites or social media to book hotel rooms (Sigala, Christou and Gretzel, 2012). Moreover, dynamic pricing

indicates statistical significance related to pricing optimization methods with standardized coefficients of β=-0.313, t-value=-2.638, and $p<0.01$. These findings are in line with the empirical approach stating that the hospitality industry is changing rapidly, shifting from traditional pricing methods to new technology dynamic pricing functions. In addition, new approaches of pricing are available through the increasing popularity of shared services, e.g. Airbnb or Uber, thus creating a new dimension of real-time demand and pricing. The advantages of dynamic pricing stipulate a consumer-centric pricing level, which facilitates a real-time, dynamic promise of providing the final consumer with inventory control, a selection of time and day of the week, competitive advantages, and their own willingness to pay (Bodea and Ferguson, 2014:170). In practice, it is clear that the selling floor of the static prices is no longer effective and efficient. Moreover, this study's findings show a significant relationship between revenue management incentive metrics connected to the main stakeholders, such as hotel manager and revenue managers (i.e., average daily rate (ADR), occupancy percentage (OCC.%), and revenue per available room (RevPAR)) and the pricing optimization methods variable, with a value of $F = 3.992$ and a level of significance of $p < 0.05$. Hence, the results indicate that there is a positively related significant linear relationship between revenue management incentive metrics and pricing optimization methods, with standardized coefficients of β=0.226, t-value=1.998, and $p<0.05$. The RM metrics are associated with the goal of the hotel revenue manager to maximise revenue and increase profitability. The primary challenges that a revenue manager faces are related to how the results will positively affect the key performance metrics (KPIs) and rewarding, generating a higher level of value to the stakeholders business. Therefore, revenue managers are becoming central

strategic players on the field of implementing pricing strategies. Their efforts towards tactics to optimize revenue can influence the improvement of the demand generation of RevPAR, in achieving the annual goal.

This research further investigates the impact of dynamic pricing mechanisms used in hotels to model consumer behaviour, creating pricing strategies related to the target market segmentation, to reach the fifth objective.

From a hotel's perspective, segmentation strategies focus on identifying the different consumers or products, based on attributes and schemes (Bodea and Ferguson, 2014:2). Hotels implement market segmentation strategies to find consumers that are willing to pay a specific customised price for the received service. Therefore, hotel management can employ a pricing structure that induces the price-sensitive consumers, in order to segment them, based on reservation request characteristics. In fact, Phillips (2005:269) argued that understanding consumers' needs establishes an effective incentive for offering prices that will maximise the hotel's revenue. That said, customised pricing and product differentiation would reduce competition uncertainty and each supplier would have the opportunity to offer profitable prices that would increase profit. This is in agreement with this research's findings that confirm that market segmentation indicates statistical significance related to the NYOP selling mechanism, with standardized coefficients of β=-0.463, t-value=-3.459, and p<0.01. Utilizing the increasing use of the Internet for segmenting consumers is an effective tactical pricing strategy, which reduces the hotel's needs to compromise and create price promotions. However, segmenting pricing requires creative tactics to find a basis for a segmentation (Nagle and Holden,

2002:250). The results of this study, presented in Table 6-25, confirm that distribution channels are positively related to the NYOP selling mechanism, with standardized coefficients of β=0.739, t-value=5.524, and p<0.001. The NYOP model is a channel that allows consumers to acquire services with an unknown provider identity. Therefore, hotels employ the NYOP model to overload the distressed inventory without confronting consumer's credibility and their reputation due to the unknown service provider. As such, the hotel management can employ a pricing structure that will induce the price-sensitive consumers, in order to segment them based on reservation request characteristics. Because of the differentiated willingness to pay, hotels create a pricing policy with restrictions (fences). However, the ability to segment the hotel market depends upon the hotel management's capability to identify the different groups and their willingness to pay (Phillips, 2005).

Finally, **the sixth objective examines pricing methods used to influence consumers when purchasing a travel product online through online travel intermediaries.**

The question refers to how hotels choose to sell their products. The Internet provides alternative pricing models based on customized pricing, such as the auction pricing (Phillips, 2005). A major factor for reaching the final consumer involves selling through online distribution channels (i.e. OTA). A model for helping hotels reach a specific segment of consumers is featured in the opaque selling mechanism (NYOP selling mechanism), which has a strong influence on competition, without cannibalizing changes in demand, pricing strategies, and hotel branding. The hotel guarantee service specification is yet another way to

adjust prices, depending upon the level of demand and the consumer's willingness to pay for the provided services.

The results indicate a positive relationship between this selling mechanism and the components of tactical revenue management, which influence a consumer's perception of online booking. The findings presented in Table 6-26 confirm that social media is positively related to the NYOP selling mechanism, with standardized coefficients of β=0.250, t-value=2.068, and p<0.05. According to Hinz and Spann (2010) the added value based on technological advancements creates a social environment, with hotels using social media and selling mechanisms such as the NYOP model or OTAs to acquire consumer behaviour and attributes and where bidders may share information with prospective bidders. The study's findings also confirm that dynamic pricing is related to the NYOP selling mechanism with standardized coefficients of β = -0.285, t-value = -2.117, and p<0.05. This supports previous findings that indicate that the NYOP mechanism enables a dynamic approach to both, sellers and buyers. The NYOP enables online consumers to personalize pricing and sellers to accept the threshold prices, which they are willing to sell their products for. Therefore, both, buyer and seller, dynamically influence the price of a product (Hann and Terwiesch, 2003; Spann $et\ al.$, 2004). Moreover, distribution channels are positively significant with the NYOP selling mechanism, with standardized coefficients of β=0.591, t-value=3.909, and p<0.001. As the major distribution channels it also offer brand shielding, helping hotels to offer discounts and to increase revenue in a practical way, without making the brand known. The NYOP mechanism reaches consumers that are sensitive to prices and flexible to accept the uncertainty regarding the details of the purchased service, who would otherwise continue to stay outside a hotel's market segment (Fay, 2004;

Talluri and van Ryzin, 2004). Market segmentation indicates statistical significance related to the NYOP selling mechanism with standardized coefficients of $β=-0.408$, *t*-value=-3.442, and $p<0.01$. This statistical significance confirms the study's main goal, which is to understand the correlation between willingness to pay and consumers' behaviour. In practice, which consumers are buying, how they buy, what they buy, and what their willingness to pay is (Talluri and van Ryzin, 2004:580). As noted by Anderson and Wilson (2011), the NYOP selling mechanism targets price sensitive (brand agnostic) consumers over brand loyal (price inelastic) consumers. This is because the consumers declare what they are willing to pay for a generic product and not for specific brand features. However, this willingness to pay may convince the seller of a false behaviour and may jeopardize the seller's profit (Hann, Hinz, and Spann, 2006).

8.2.3   Study Three – Social Media and RM Strategies

The rise of e-commerce provides a variety of distribution channels that a hotel can embrace to influence consumer behaviour. These changes in technology have brought a pricing transparency and have enhanced the consumer behaviour and the travel experience. Hotels must consider the impact of pricing on shopping searches. This creates a need to implement online pricing strategies as a tool to meet this demand. Social media elucidates an important role in the consumer generated content, initiated by online hotel information searches (Xiang and Gretzel, 2010). Therefore, hotel revenue managers should integrate a new way of thinking, to determine the consumers' adoption of social media and the use of purchase provided services. Today, social media has moved pricing strategies onto a new, particularly challenging level. Consumers become more sophisticated, as they can always be aware of hotel promotions

and unique sales opportunities, which they can compare before purchasing or they can wait and speculate on lower prices. In addition, social media provides channels to distribute and optimize the ancillary product or service sales, not just from the rooms revenue perspective. Moreover, consumer retention has been identified as a key challenge for hotels (Cross, Higbie, and Cross, 2009). Thus, consumer feedback becomes important because it increases brand awareness that leads to consumer trust and loyalty towards a certain hotel. Established trust in services and purchasable products tends to improve awareness and increase revenue (Noone, McGuire, and Rohlfs, 2011). In this study, the researcher has presented a number of relationships when practicing different pricing approaches using social media as a distribution channel in the current online environment.

Therefore, **this study's seventh objective was to examine the relationships, how social media used as a distribution channel to encourage consumers to utilize direct bookings through pricing techniques. How this impact revenue strategies and profitability.**

To examine the distribution channel effectiveness of social media and the opportunities offered for revenue management implementation leveraging, these functionalities expedite conversation to pricing strategies, the researcher created a path model (Fig. 7-2) showing the hypothesized relationships between social media and revenue management practices.

For this research, the sample is composed of hotel executives that hold a managerial position and managers with a direct influence on revenue management and pricing decisions. They promote pricing strategies, using

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social media, either through the firm's own transaction-processing systems or through channel management. Social media provides an additional channel to optimize the distribution to overcome the dependence on OTA's, targeting consumer satisfaction, distribution cost reduction, and revenue improvement (Withiam, 2012).

The results of ANOVA indicate that revenue generating campaigns, using social media, are more effective when implementing mainly dynamic pricing over other pricing techniques. Hypotheses 1, 2, partially 3, 4a, and 4b were positively supported by the results. The findings support the hypotheses regarding the relationship between social media and distribution channels. Whitelaw (2008:182) found that the adoption of ICT further supports and impacts operational level decision making (operational statistics and financial results) of revenue management implementation based on marketing distribution approaches. There is a positive relationship between social media and distribution channels (H1), with standardized coefficients of $\beta=0.256$, t-value=2.218, and $p<0.05$, and dynamic pricing and social media (H2). The results show a value of $F = 7.834$ with a level of significance of $p < 0.001$ and support H2. This is consistent with the findings of Noone, McGuire, and Rohlfs (2010), who indicated a revenue management shift from a tactical to strategic approach, incorporating marketing, sales, and channel strategies, including pricing, social media, mobile distribution, flash sales, and review sites. Using social media platforms, hotels are able to drive bookings, which become an important component to reducing incremental distribution costs. Accordingly, a behavioral data analysis reveals a correlation between social media and hotels' conversion rates (Anderson, 2012). Social media can increase the influence

that hotels have on consumer behaviour purchasing patterns, showing an impact on bookings, occupancy, and revenue. Therefore, hotels can use social media to develop a consumer centric approach, driving sales through the push of competitive prices, using tactical day-to-day strategies.

Social media usage was found to provide a significant platform for the direct implementation of pricing techniques (H4b) with standardized coefficients of $β=0.414$, t-value=3.910, and $p<0.001$. However, it is only partially significant when considering the indirect approach, as one path was found not to be statistically significant (H3). This analysis indicates that revenue management implementation focuses on adjusting prices in response to demand in a more sophisticated way because of the shift from tactical to strategic methods and vice versa, based on the time and market challenges. This supports previous findings that indicate that, in practice, hotels are adopting different pricing techniques. This pricing optimization incorporates the consumer willingness to pay, costs, the competitive environment, and the economic volatility as key elements in order to explore ways to maximize returns (Phillips, 2005). However, contrary to the previous findings of Phillips (2005), the relationship has only been partially confirmed. The emergence of a consumer-centric approach creates a broader set of distribution channel choices, through an increasing range of Internet systems, to develop demand on offered pricing capabilities, alternative modes of pricing, and revenue management optimization. The company must devise appropriate strategies to target the market segment through a distribution channel (Yeoman and McMahon-Beattie, 2011). However, contrary to expectations, the reality has been quite different. Many hotels are beginning to struggle because of the pricing complexity, the

distribution channel cost based on elasticity of demand, and the magnitude of pricing decisions. This is supported by Cross *et al.* (2009), showing that working on how to control the selling environment through online distribution and pricing strategies to third party sites has become complicated. In other words, hotels continue their room pricing, using the traditional approaches to pricing models, based on cost plus and market based pricing (H4b). At the same time, the drawback of the traditional pricing techniques is that they do not take into account the market potential and the capability of appealing to different consumer segments by offering different prices.

According to the data analysis for H4b, there is a positive relationship between distribution channels and traditional pricing approaches when a revenue manager uses social media to promote sales based on a variety of other pricing approaches. The results of the regression confirm that the use of social media is positively related to the interaction between the traditional pricing techniques and the operational level components of online distribution, with standardized coefficients of β=0.364, t-value=3.176, and p<0.05. Currently, hotels develop consumer centric strategies, pushing competitive prices, using social media as an important tool to influence consumers to book hotel rooms.

As such, social media provides the platform to promote tactical revenue management strategies and to practice differential pricing motives that enhance a hotel's value proposition and develop prices that consumers are willing to pay (Anderson, 2012; Sigala, Christou, and Gretzel, 2012).

A summary of the hypothesized relationships are demonstrated in Table 8-4.

Table 8-4 Initial hypotheses testing relationships

Hypotheses	Hypothesized Relationships Path	Result
H1	Social Media → Distribution Channels	Supported
H2	Dynamic Pricing → Distribution Channels → Social Media	Supported
H3	Distribution Channels → Traditional Pricing Techniques → Social Media	Partially Supported
H4a	Social Media → Dynamic Pricing	Supported
H4b	Social Media → Traditional Pricing Techniques	Supported

Source: Author

8.3 Research Implications

The research findings of this study have a number of significant theoretical and managerial implications. A discussion of theoretical and managerial implications of the research follows.

8.3.1 Managerial Implications

In this thesis, a number of practical implications have been identified. In light of this contribution, the researcher has provided a model to illustrate that the effect of revenue management and pricing implementation strategies is of central importance to respond to the main stakeholder's expectations as well to maximise the profitability. The thesis results provide empirical evidence and valuable insights to managers on the antecedents that drive profitability, when applying pricing strategies.

First, to the author's knowledge, this research is one of the first to examine empirically the connections and applications of different levels of revenue management and pricing approaches from two different perspectives, namely: (a) the final consumer's willingness to purchase travel services, and (b) the hotel's approach of using revenue management metrics and pricing methods to promote its products. This research combines both, the theoretical and the practical approach, using a working framework that classifies the different interrelations. This research is important, as its focus is to investigate the consumer behaviour towards dynamic pricing, by examining the impact of the NYOP selling mechanism and other pricing methods when booking travel products through online travel agencies. Taking this into consideration, the consumer willingness-to-pay perception depends on the magnitude of the price discrepancies between providers and should be treated with caution.

Second, this study contributes to a better understanding of the relationship between consumer's perception strategically when deciding to accept or reject a set of controls (i.e. booking restrictions), since consumer purchasing behaviour creates a strategic interaction between themselves and the company's dynamic pricing policy. As mentioned in the literature, to efficiently incorporate pricing strategies, the company should optimize purchase behaviour and segment consumers into myopic consumers and strategic consumers (Yeoman, McMahon-Beattie, and Ingold, 2000; Talluri and van Ryzin, 2004). The bid prices induce sensitive consumers to wait where the company can create the gap between the consumer's perception stimulated by reducing the prices according to the company's consumer segments that impact capacity pricing policies due to availability and prices updated more frequently. This requires

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certain evaluation of how demand changes with price and when to lower or raise prices to maximize profits (Bodea and Ferguson, 2014:146). The consumer perception in response to a company's dynamic pricing policies and booking fences, depending upon the antecedents of how consumers form willingness to pay, against the benefit from price discrepancies within consumer segments. However, in practice, it is common that the hotel reservation department denies an advanced request (bid) to price sensitive consumers because is expecting that higher price paying consumer will request the room at a later stage.

Third, this study is important as it focuses on better understanding how the relationship between the operational revenue management levels and social media, used as a distribution channel, to influence consumers to purchase holidays using social media. The study indicates practical perspectives it terms of the impact of dynamic pricing and alternative pricing techniques on a hotel's performance and the use of social media. Thus, the study indicates which pricing approach as a strategy contributes to effectively manage social media as a distribution channel taking into consideration the probability that creates a consumer benefit and maximizes the hotels' expected revenues. Social media are enhancing pricing opportunities providing a customized real-time interaction between the hotel and consumer.

Therefore, the current thesis contributes by filling the gap between the revenue management implementation and the hotel's day-to-day operations, including the potential impact of increased pricing competition.

8.3.2   Theoretical Implications

This thesis results have a significant theoretical contribution to revenue management theory and the immediate disciplines by incorporating concepts for the wider body of knowledge.

First, the research contributes to the current theory, as it covers a wide range of issues in revenue management, from dynamic pricing, to social media. The researcher is using the term dynamic pricing in a broad sense. In general, it refers to the dynamic adjustment of prices for different consumers, using different distribution channels. Furthermore, the review of the literature has shown that there are clear gaps in the academic research. Online travel intermediaries have changed the way consumers purchase a travel product.

Second, pricing, as a process, has been a critical issue in the online travel environment due to price transparency. Therefore, given the importance of the issues involved and the rapid changes taking place in the online travel agency landscape, the research provides a clear picture of the necessary elements for a successful implementation of pricing strategies by hospitality operators. It uses empirical testing to show how the extended revenue management level of decisions impacts RM and pricing in practice. Consider the framework model of Talluri and van Ryzin (2004) point out the revenue management levels as being either quantity-based RM or price-based RM (Figure 8-1), this study developed an empirical conceptual model based on day-to-day operational approach pricing strategies and behavioural parameters to explain the challenges faced by the involved stakeholders group to optimize revenues. Within the formation of pricing strategies this research offers a new inside that capture revenue management implementation relationships i.e. market segmentation, product

(constrain and unconstrained demand), and distribution channels of RM and behavioural pricing i.e. dynamic pricing, reference price formation, and alternative traditional pricing techniques. It integrates the decision levels in an operational context.

Third, the Internet offered several reference points to consumers when searching for a better deal, or consult other consumers' reviews, although hospitality operators implemented rate parity policies within the distribution channels. Consumers react to the surging popularity of the distribution channels, switching intentions to the online shopping environment. Therefore, price setting strategies as contextual factors may be developed as an interaction between revenue management and distribution channels and as a decision tool.

8.4   Limitations

This research provides new insights into the hotel industry and into the individual consumer's perception of dynamic pricing strategies. However, this research has several limitations. The study was not longitudinal and the data was collected through an online survey. Therefore, the generalizability of the results is not clear, as it captured the consumer perception at a given time. The study investigated tactical levels of revenue management. It is discussing operational day-to-day implementation of revenue management performance drivers. The researcher has chosen the online travel environment and hotel industry because of his previous occupation and experience. Therefore, he has empirically developed an expanded revenue management levels framework applicable to the industry, which determines the relationships between the revenue management key elements. However, the main elements of the

revenue management levels relationships are too broad. The researcher has developed measurement scales to assess the framework and further scale development could generate higher factors reliability. Throughout this evaluation, an interaction between distribution channels, pricing approaches, and revenue management metrics involved that contributed to understand the consequences of application dynamic pricing strategies. Furthermore, the study captured consumer perception of willingness to pay at a given time, which may vary, based on the population and the individuals' judgement. In this respect, the results and conclusions of the current study are valid with caution when applying revenue management and pricing strategies. Therefore, the results drawn must be interpreted from a logical thought thus generalizing the results might not be applicable to any other industry.

First, this study was challenging with respect to two different convenience samples. The first, the name-your-own-price (NYOP) study, employed a convenience sample of individual consumers and the latter, the pricing approaches in hotels study, employed a convenience sample of executives holding a managerial position with a direct influence on revenue management and pricing decisions. These two different sets of sample data may cause demographic differences. The first study's convenience sample refers to consumers that responded to a given scenario. Consumers may have diverse purchasing behaviors and emotions when making a purchase decision. Moreover, the NYOP model is based on a bidding approach with limited manipulations to the number of bids. In addition, consumers' familiarity with the specific selling model and the product may play an important role in establishing the threshold price for booking a service, using the reference price information.

For the second and third study, the researcher has reached the respondents through personal contacts in the hospitality sector, as he had worked in the same industry for several years. Additionally, the sample for the second and third study was relatively small (n=76), thus limiting the results, and the findings should be interpreted with a degree of caution. Moreover, respondents come from mixed positions and have different pricing decision-making roles. The ideal would be that all participants have the same job capacity, otherwise their responses to the online survey might conflict with the operational performance targets within their position.

Second, the name-your-own-price (NYOP) study was challenging with respect to the fact that it was based on a proposed set scenario. Whilst filter questions were used to reduce the generalizability of the participants, and it was ensured that participants were familiar with the specific selling approach, the result may reveal external validity. The availability of product information and the consumer willingness to pay indicate a significant effect on consumer decision-making, depending on several factors. Ideally, participants should proceed to purchase a service based on their income, their confidence, their intention to book, their satisfaction, and their positive and negative behavioural perceptions of using the model. Because the findings are based on a scenario the significant consumers' experiences may vary from actual reservation circumstances. Otherwise in a real online environment simulation more control filters than the ones in this research should be considered.

Third, this is an empirical study, which examines cross industries, such as the hospitality and online travel. To measure the effects of revenue management

implementation, the research has created its own measurement constructs. Because of this, some items illustrated low reliability and may not have measured the expected responses. Some measurement items were highly correlated, resulting from collinearity issues during the confirmatory factor analysis (CFA). Improvement on the scale development or using scales already proved may lead to different results. Further scale development and hypotheses adjustments may lead to identifying more significant findings.

8.5   Future Research

The current study covers a wide area of research, such as revenue management and pricing. Future research may investigate the results of dynamic pricing in hospitality based on big data analytics, macroeconomic trends, and industrial stock price fluctuation, in a proposed conceptual framework with consumer behaviour perception under purchase intention. The mentioned opportunities for research only represent a further investigation to advanced research in the area.

First, today, the key issues of revenue management and revenue optimization have been transformed from how to efficiently use inventory and price inventory at a given time, to how to optimize the target markets based on consumer behaviour perceptions. Hotels have to integrate data from different sources and capture the value of consumers. Therefore, recent innovations in revenue management systems drive an effective business intelligence strategy, by integrating data from online and offline sources, adopting data from social media, review sites, competitive advantage information, market information, and even weather forecasts. Hotels, collecting data, have to figure out how to clean

and incorporate the data into demand forecasting and optimization process to target the price dynamic of the time and place along with the market and specific customer centric strategies.

Second, due to economic uncertainty, the global travelling market has been changed dramatically. The growth has been slowed. New market players, such as Airbnb or Uber, are challenging the established hospitality and travel environment, shifting the demand to a sharing economy. The importance of consumers using technology has led to a market differentiation. The consumer is now, more than ever before, price sensitive because of many different drivers. Recently, the practices of rate parity have been embraced to a legal challenge between the hoteliers, OTAs, and country legislations. These rate parity agreements have come under scrutiny because of violated antitrust and consumer discrimination laws between hoteliers and OTAs. Although this study contributes to the utilization of pricing approaches to macroeconomic trends, the knowledge can also be used to extend current research and to develop a conceptual framework to inform the changes towards industry empirical practices.

Third, the implementation of different pricing approaches has changed the utilization of the revenue management metrics expectations considerably. Today, hotel revenue management strategies are strongly based on tactical pricing and day-to-day strategies because of the rapidly changing travel environment. The hotel industry has shared grounds with the stock market, as the prices fluctuate from period to period, depending on the consumer purchasing behaviour, as a result of changes in the demand function over time.

In addition, the hotel room is a perishable product, similar to commodities. Hotel and stock market industries are influenced by external factors and should either embraced methods to effectively manage the optimal price, being the price that causes the supply to run out exactly at the end of the horizon, or establish pricing strategies that ensure hotels that they can offer competitive prices (Talluri and van Ryzin, 2004:192). Using revenue management systems or real-time pricing approaches in a hotel that are similar to the ones used in the stock market, analysing the market demand based on current or historical conditions, and channel management ensure an optimal pricing, which in return ensures a significant opportunity for profit.

Finally, this study proposed an empirical approach to the relationship consequences of different pricing approaches, working with marketing, consumer behaviour, and distribution channels to ensure the highest expected business performance.

The evolution of the Internet creates a new marketplace in which the consumer purchase behaviour plays the main role. This may provide hospitality companies an opportunity for better communication between the marketing, the sales and the revenue management department to focus on aligned goals. It is an essential challenge for academia and practitioners to become prepared for the latest changes and to improve the models and the drivers within the industry accordingly.

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APPENDICES

Appendix A – Questionnaire – NYOP model

Appendix B – Questionnaire – Hotel Pricing

Appendix C – Statistics Chapter Six

Appendix D – Statistics Chapter Seven

Appendix A – Questionnaire NYOP model

Consumer Survey on Name-Your-Own-Price Model (NYOP)

Introduction

The following survey is connected to an academic research study. This Research is conducted by Apostolos Ampountolas, a Ph.D. researcher in Management, University of Exeter, Business School, as part of his doctoral thesis.

This conducting research concentrates into the use of dynamic pricing part of the revenue management strategy within the online travel agencies.

Dynamic pricing is real time pricing. It is a set of flexible prices, a price adjustment depending upon the level of demand and the customer willingness to pay for a product or service.

Performance measurement has been widely covered within the hotel sector but hasn't been studied to the same extent within the Online Travel Agencies sector.

The survey should take approximately 10 - 15 minutes of your time. You may work at your own pace. The information supplied will remain strictly confidential. All responses will be kept anonymous. No personal data will be asked. Your responses will be seen only by the researcher.

I would be very grateful if you could assist me with my research by completing the enclosed questionnaires. If you would like to be kept informed of progress, then I shall be pleased to do so.
By answering the questions, you are agreeing to participate in the research. If you would like to leave the survey at any time, just click "Exit and clear this survey".

Thank you in advance for your time. I hope you can assist in my research.

Best wishes,

Apostolos Ampountolas
Ph.D. Researcher
University of Exeter Business School
Exeter, UK
Email: aa467@exeter.ac.uk

There are 15 questions in this survey

Demographic Information

1 []

Please tell me about yourself. Are you? *

Please choose **only one** of the following:

- Female
- Male

2 []

Your (respondent) age: *

Please choose **only one** of the following:

- 18 - 30 years old
- 31y - 40y
- 41y - 50y
- 51 y or greater

3 []

What is the highest level of your education? *

Please choose **only one** of the following:

- Secondary School
- College - Diploma
- Bachelor's Degree
- Graduate Degree (Master's, etc.)
- Ph.D. or equivalent

4 []

Which of the following categories is close to your job? *

Please choose **only one** of the following:

    CEO, Managing Director

    Division Director

    Department Director

    Manager

    Professional

    Technician

    Sales and Service Worker

    Student

    Other

5 []

In what region of the world you do reside? *

Please choose **only one** of the following:

    United States

    Canada

    Europe

    Central America

    South America

    Middle East

    Oceania

    Asia

    Africa

    Other

6 [] What is your average annual household income: *

Please choose **only one** of the following:

Less than $19,999 or (£12,720 // €17,470)

$20,000 - $29,999 or (£12,720 // €17,470 - £19,080 // €26,210)

$30,000 - $39,999 or (£19,080 // €26,210 - £25,440 // €34,940)

$40,000 - $49,999 or (£25,440 // €34,940 - £31,800 // €43,680)

$50,000 - $74,999 or (£31,800 // €43,680 - £47,695 // €65,520)

$75,000 - $99,999 or (£47,695 // €65,520 - £63,595 // €87,360)

$100,000 - $124,999 or (£63,595 // €87,360 - £79,495 // €109,200)

Greater than $125,000 or (£79,495 // €109,200)

Name-Your-Own-Price (NYOP) Model

The NYOP model (Name-Your-Own-Price), allows customers to have more impact on the amount they are prepared to pay (WTP). Instead of posting a price, the seller waits for a potential buyer offer that can either accept or reject. In return, consumers agree to varying degrees of flexibility in the brand and product uncertainty features they receive for their offered price.

Suppose you were to book a travel product (hotel room or flight), you have to state your willingness to pay (WTP). After you place a bid (WTP), the online operator using the NYOP model searches for any hotel willing to accept your price (WTP). If the operator confirms a hotel, your credit card will be charged and you cannot cancel or change dates. In case of your bidding is not successful you would not be allowed to bid again for the next 12 hours?

Bear this in mind as you respond to the following questions.

7 []

Have you ever booked a hotel room or flight using the Name-Your-Own-Price model (NYOP)?

(If "YES" continue to the next question, If "NO" Exit the survey) *

Please choose **only one** of the following:

Yes

No

8 []

How often have you booked a hotel through a name-your-own-price model the last two years? *

Please choose **only one** of the following:

Several times a year

Several times a month

Once a year

Less than once a year

9 []Experience in using the Name-Your-Own-Price approach (NYOP) to purchase travel products or services. *

Please choose the appropriate response for each item:

	Strongly Disagree	Disagree	Somewhat Disagree	Neither	Somewhat Agree	Agree	Strongly Agree
I feel satisfied using the NYOP model to book a hotel room or	○	○	○	○	○	○	○

purchase travel products.

I feel satisfied with the purchased product quality (hotel booking) when using the NYOP model.

○　　　○　　　○　　　○　　　○　　　○　　　○

I feel satisfied with the context choice of hotel products when using the NYOP model.

○　　　○　　　○　　　○　　　○　　　○　　　○

I feel satisfied that the company understands the value consumers place on the product or services and that they set minimum rates accordingly.

○　　　○　　　○　　　○　　　○　　　○　　　○

I am happy when I am able to book travel products to a lower price than I expected.

○　　　○　　　○　　　○　　　○　　　○　　　○

I feel uncomfortable using the NYOP approach to book a hotel room or purchase travel products.

○　　　○　　　○　　　○　　　○　　　○　　　○

I regret booking a hotel room or purchasing travel products using a bid approach.

○　　　○　　　○　　　○　　　○　　　○　　　○

I felt confused while purchasing travel products or services using the NYOP approach.	○	○	○	○	○	○	○
I feel confident using the NYOP approach to book a hotel room or purchase travel products.	○	○	○	○	○	○	○
I believe that the agencies using a Name Your Own Price approach are selling their products to lower prices.	○	○	○	○	○	○	○
I know that using the NYOP approach requires a degree of flexibility (location, non cancellation etc.).	○	○	○	○	○	○	○
I know that using the NYOP approach creates a reservation uncertainty (confirmation).	○	○	○	○	○	○	○
I feel more confident with my willingness to pay (WTP), when I know the reference price.	○	○	○	○	○	○	○
I obtained better prices using the NYOP model than through the other Online Travel	○	○	○	○	○	○	○

Agencies.

I obtained discounts that most consumers don't get.
○   ○   ○   ○   ○   ○   ○

I obtained better prices using the NYOP model instead of booking through an Online Travel Agency that also offered extra freebies.
○   ○   ○   ○   ○   ○   ○

The confirmed price was according to the value of my willingness to pay (WTP).
○   ○   ○   ○   ○   ○   ○

I know where to find the information I need for the manipulation of the bidding prices prior to making a bid.
○   ○   ○   ○   ○   ○   ○

I always check hotel prices through other distribution channels such as Online Travel Agencies to ensure I will get the best value.
○   ○   ○   ○   ○   ○   ○

Using the NYOP approach, I am expecting high product quality for the money I spend.
○   ○   ○   ○   ○   ○   ○

The quality and amount of information using the NYOP approach have a significant
○   ○   ○   ○   ○   ○   ○

impact on my choice.

Using the NYOP model, the seller accepted the first bid.   ○   ○   ○   ○   ○   ○   ○

Using the NYOP model, the seller did not accept the first bid and I had to repeat a bid at a higher rate.   ○   ○   ○   ○   ○   ○   ○

Using the NYOP model, the first and second bids were not accepted and I booked through an Online Travel Agency.   ○   ○   ○   ○   ○   ○   ○

Do you think the NYOP approach is a FAIR price approach?   ○   ○   ○   ○   ○   ○   ○

Do you prefer to book using posted reference prices instead of the Name Your Own Price approach?   ○   ○   ○   ○   ○   ○   ○

I prefer to search hotel deals before I chose which online distribution channel use to make a booking.   ○   ○   ○   ○   ○   ○   ○

It is likely that the NYOP approach I chose is better than the Online travel Agencies method of booking I am currently familiar with.   ○   ○   ○   ○   ○   ○   ○

I am likely to find the best prices, purchasing travel products or services online.	○	○	○	○	○	○	○
I am likely to purchase travel products online from the distribution channel with the best prices.	○	○	○	○	○	○	○
I am always using an online distribution channel to purchase travel products or services.	○	○	○	○	○	○	○
In the future, I plan to purchase travel product or services using a NYOP approach website.	○	○	○	○	○	○	○

10 []

Imagine that you want to book a hotel in London (UK) in July 2015. You want to use the name-your-own-price model and book the hotel. Your booking criteria as following:

City: London (UK), Hotel category: 4 star, Location: City Center

Period: July 2015

Online Travel Agency rate: **$200 per room/night** *

Please write your answer(s) here:

Type your bid price here ($):

11 [] Considering the previous question 10: *

Please choose the appropriate response for each item:

	Strongly Disagree	Disagree	Somewhat Disagree	Neither	Somewhat Agree	Agree	Agree Strongly
Did you place a bid lower than the online travel agency reference rate?							

12 []

Which of the following helped you to place the bid using the NYOP model? *

Please choose **all** that apply:

Previous booking

Special Offer in place (running)

Bid close to the online travel agency rates

Knowledge of the destination

A guess

By mistake

Other:

General Information

13 []Which hotel category do you usually book online? *

Please choose **all** that apply:

    1 - 2 stars

    3 stars

    4 stars

    5 stars

14 []Are you a member of any online travel agency (OTA) loyalty program, such as Priceline Rewards, Expedia Rewards, Orbitz Rewards etc.? *

Please choose **only one** of the following:

    Yes

    No

15 []Before deciding to purchase travel product or services online, you will: *

Please choose **only one** of the following:

    Search for a deal online through an online distribution channel (online travel website)

    Search for a deal online on two / or more online distribution channels

The survey is complete. Thank you very much for the participation in this research. It will help me to understand how revenue management and dynamic pricing models have an impact on your experience as a customer.

06-10-2015 – 00:00

Submit your survey.
Thank you for completing this survey.

Appendix B – Questionnaire Hotel Pricing

Pricing Approaches in Hotels

Introduction

The following survey is connected to an academic research study. This Research is conducted by Apostolos Ampountolas, a Ph.D. researcher in Management, University of Exeter, Business School, as part of his doctoral thesis.

The conducting research concentrates into the use of dynamic pricing part of the revenue management strategy within the online travel agencies. Dynamic pricing is real time pricing. It is a set of flexible prices, a price adjustment depending upon the level of demand and the customer willingness to pay for a product or service.

Performance measurement has been widely covered within the hotel sector but hasn't been studied to the same extent within the Online Travel Agencies sector.

The survey should take approximately 10 minutes of your time. You may work at your own pace.

The information supplied will remain strictly confidential. All responses will be kept anonymous. No personal data will be asked. Your responses will be seen only by the researcher.

I would be very grateful if you could assist me with my research by completing the enclosed questionnaires. If you would like to be kept informed of progress, then I shall be pleased to do so.

By answering the questions, you are agreeing to participate in the research. If you'd like to leave the survey at any time, just click
"Exit and clear this survey".

Thank you in advance for your time. I hope you can assist in my research. Best wishes,

Apostolos Ampountolas

Ph.D. Researcher

University of Exeter Business School

Exeter, UK

Email: aa467@exeter.ac.uk

There are 17 questions in this survey

Demographic Information

[]Please tell me about your self. Are you? *

Please choose **only one** of the following:

◯ Female

◯ Male

[]Your (respondent) age: *

Please choose **only one** of the following:

○ 18y - 30 years old

○ 31y - 40y

○ 41y - 50y

○ 51y or greater

[]What is the highest level of your education? *

Please choose **only one** of the following:

○ Secondary School

○ College - Diploma

○ Bachelor's Degree

○ Master's Degree

○ MBA

○ Ph.D. or equivalent

[]What is your education background? *

Please choose **only one** of the following:

○ Business Administration

○ Hospitality and Tourism

○ Accounting or Finance

○ OR / Engineering

[]In what region of the world you do reside? *

Please choose **only one** of the following:

○ United States

○ Canada

○ Europe

○ Central America

○ South America

○ Middle East

○ Oceania

○ Asia

○ Africa

○ Other [   ]

General Information - Hotel

[]**Which of the following categories is close to your job? ***

Please choose **only one** of the following:

○ CEO, Managing Director

○ Division Director

○ Department Director

○ Department Manager

○ Revenue Manager - Analyst

[]**Which of the following applies to you? ***

Please choose **only one** of the following:

○ I work in an private owned hotel (1 - 2 star)

○ I work in an private owned hotel (3 star)

○ I work in an private owned hotel (4 star)

○ I work in an private owned hotel (5 star)

○ I work in a hotel corporate owned by a small to mid-sized hotel chain (5-15 hotels)

○ I work in a hotel corporate owned by a mid to large-sized hotel group/chain (15+ hotels)

[]**How long have you been working with the company? ***

Please choose **only one** of the following:

○ Less than one year

○ One year

○ 2 to 5 years

○ 5 to 10 years

○ More than 10 years

Revenue Management and Pricing

[]Who is responsible for the day-to-day Revenue Management strategies at your hotel? *

Please choose **only one** of the following:

- ◯ Revenue Manager - Analyst
- ◯ Hotel General Manager
- ◯ Front Office - Reception
- ◯ Reservation Manager
- ◯ Rooms Division Manager
- ◯ Head Office

[]Please indicate the importance of the following essential key functions of revenue management. *

Please choose the appropriate response for each item:

	Not at all important	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important
Forecasting Demand	○	○	○	○	○	○	○
Price Management	○	○	○	○	○	○	○
Capacity Management	○	○	○	○	○	○	○
Market Segmentation	○	○	○	○	○	○	○
Market Positioning	○	○	○	○	○	○	○
Distribution Channel Management	○	○	○	○	○	○	○
Is the revenue manager's performance directly measured through RM metrics (ADR, RevPAR etc.)?	○	○	○	○	○	○	○
Is the hotel manager performance connected to RM metrics (ADR, RevPAR etc.)?	○	○	○	○	○	○	○
Is the sales manager performance connected to RM metrics (ADR, RevPAR etc.)?	○	○	○	○	○	○	○
Cost-based pricing	○	○	○	○	○	○	○
Inventory-based pricing	○	○	○	○	○	○	○
Customer-centric pricing	○	○	○	○	○	○	○
Competitors-based pricing	○	○	○	○	○	○	○
Bid price	○	○	○	○	○	○	○

[]Please answer the structured questions below about your firm by choosing the point that most closely matches your answer. *

Please choose the appropriate response for each item:

	Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly agree
We promote the hotel differently to various groups of consumers.	○	○	○	○	○	○	○
We divide consumers into groups based on similar or same buying characteristics.	○	○	○	○	○	○	○
We group consumers and focus on understanding their needs.	○	○	○	○	○	○	○
We understand the consumer target markets of our competitors.	○	○	○	○	○	○	○
We invest in innovation to identify new consumer segments.	○	○	○	○	○	○	○
We categorize consumers according to whether are traveling for business, or leisure, or as group.	○	○	○	○	○	○	○
We categorize consumers and offer different prices based on their locations.	○	○	○	○	○	○	○

[] *

Please choose the appropriate response for each item:

	Not at all important	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important
How							

8

important is it for you to understand your competitor's pricing strategies? ○ ○ ○ ○ ○ ○ ○

How important is it to understand your competitors' promotional tactics? ○ ○ ○ ○ ○ ○ ○

On average, how important is it for you to base your prices similar with your competitors? ○ ○ ○ ○ ○ ○ ○

On average, how important is it for you to base your prices lower than your competitors? ○ ○ ○ ○ ○ ○ ○

On average, how important is it for you to base your prices higher than your competitors? ○ ○ ○ ○ ○ ○ ○

How important is it to understand your competitors' products? ○ ○ ○ ○ ○ ○ ○

How much of an essential element is it to determine an effective comp set? ○ ○ ○ ○ ○ ○ ○

To what extent does the quality of comp set affect your pricing ○ ○ ○ ○ ○ ○ ○

decisions?

[] *

Please choose the appropriate response for each item:

	Not at all important	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important
How important are the distribution channels to your hotel / chain?	○	○	○	○	○	○	○
How important is it that your hotel is represented on every distribution channel?	○	○	○	○	○	○	○
How important are the online travel agencies (OTA) as efficient distribution tool?	○	○	○	○	○	○	○
How important are buying sites or flash sales to your hotel / chain?	○	○	○	○	○	○	○
How important is your branded website as a distribution tool?	○	○	○	○	○	○	○
How important is it for you to promote through opaque distribution channels, such as Priceline.com?	○	○	○	○	○	○	○
How important is it for you to keep your rates similar on all of your distribution channels?	○	○	○	○	○	○	○
How important is the							

commission level to use a distribution channel?	○	○	○	○	○	○	○
How important is it for you to know, when which distribution channels are performing?	○	○	○	○	○	○	○

[] *

Please choose the appropriate response for each item:

	Not at all important	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important
How important is the use of social media as part of your revenue management and pricing strategy to you?	○	○	○	○	○	○	○
How important is it to promote your hotel through mobile application as a distribution channel?	○	○	○	○	○	○	○
How important is the impact of social media on your property performance indicators?	○	○	○	○	○	○	○
How important is the impact of your online reputation (reviews) on your profitability?	○	○	○	○	○	○	○
How important is the use of social media to your	○	○	○	○	○	○	○

hotel's
tactical
pricing?

How important is the use of social media within the RM strategy to improve the hotel's market share?	○	○	○	○	○	○	○

[] *

Please choose the appropriate response for each item:

	Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly agree
Is the implementation and use of dynamic pricing essential to your hotel?	○	○	○	○	○	○	○
Do promotional policies (special offers) affect the hotel prices?	○	○	○	○	○	○	○
Is dynamic pricing a fair sales distribution approach?	○	○	○	○	○	○	○
Does dynamic pricing have a positive influence on the hotel sales volume?	○	○	○	○	○	○	○
Does dynamic pricing create an increase on demand and RevPAR?	○	○	○	○	○	○	○
Does the use of dynamic pricing increase consumers' comfort to book a room in your hotel?	○	○	○	○	○	○	○

Is the

consumer satisfaction important when setting room rates?	○	○	○	○	○	○	○
Does the hotel understand the consumer value for money strategies when setting room rates?	○	○	○	○	○	○	○
Has the use of dynamic pricing increased the hotel's market share?	○	○	○	○	○	○	○
Are the competitors' pricing strategies important to you when deciding on room rates?	○	○	○	○	○	○	○

[]Are your hotel using any opaque distribution channels such as Priceline.com? *

Please choose **only one** of the following:

○ Yes

○ No

[]Please answer the following questions ONLY if your hotel uses any Opaque Distribution Channels.

Please choose the appropriate response for each item:

	Not at all important	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important
How important is it for you to promote through opaque distribution channels, such as Priceline.com?	○	○	○	○	○	○	○
How critical is the impact of the name-your-own-price (NYOP) channel on your tactical pricing strategy?	○	○	○	○	○	○	○
How critical is the impact of the name-your-own-price (NYOP) channel on your long term pricing strategy?	○	○	○	○	○	○	○
How critical is the impact of using the NYOP model on your profitability?	○	○	○	○	○	○	○
How important is it for you to sell the excess capacity through an opaque intermediary, using the NYOP model?	○	○	○	○	○	○	○
How important is it for you to increase the market share of the NYOP model at your hotel?	○	○	○	○	○	○	○

The survey is complete. Thank you very much for the participation in this research. It will help me to understand how revenue management and dynamic pricing models have an impact on your experience as a customer.
23.08.2015 – 00:00

Submit your survey.
Thank you for completing this survey.

Appendix C – Statistics Chapter Six

6.6.2 Common method variation extraction

Total Variance Explained

Component	Initial Eigenvalues Total	% of Variance	Cumulative %	Extraction Sums of Squared Loadings Total	% of Variance	Cumulative %
1	9.462	23.078	23.078	9.462	23.078	23.078
2	4.681	11.418	34.496	4.681	11.418	34.496
3	2.531	6.174	40.670	2.531	6.174	40.670
4	2.303	5.617	46.287	2.303	5.617	46.287
5	2.102	5.126	51.413	2.102	5.126	51.413
6	1.929	4.706	56.118	1.929	4.706	56.118
7	1.913	4.665	60.783	1.913	4.665	60.783
8	1.398	3.410	64.193	1.398	3.410	64.193
9	1.177	2.871	67.065			
10	1.110	2.708	69.773			
11	1.065	2.599	72.372			
12	1.004	2.448	74.820			
13	.910	2.218	77.038			
14	.830	2.024	79.062			
15	.774	1.887	80.949			
16	.725	1.768	82.716			
17	.673	1.643	84.359			
18	.613	1.496	85.855			
19	.563	1.373	87.228			
20	.513	1.250	88.478			
21	.496	1.210	89.688			
22	.459	1.118	90.807			
23	.431	1.051	91.858			
24	.411	1.002	92.860			
25	.354	.863	93.723			
26	.311	.758	94.481			
27	.297	.726	95.207			
28	.256	.625	95.832			
29	.253	.618	96.449			
30	.215	.524	96.973			
31	.211	.515	97.488			
32	.194	.472	97.960			
33	.176	.430	98.389			
34	.138	.336	98.725			
35	.125	.306	99.031			
36	.105	.257	99.288			
37	.093	.226	99.514			
38	.071	.174	99.687			
39	.061	.149	99.837			
40	.037	.091	99.927			
41	.030	.073	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component							
	1	2	3	4	5	6	7	8
q_51_DP009	.677	-.129	-.034	.022	-.099	-.342	-.019	-.101
q_41_SM002	.639	-.098	-.357	-.231	-.017	.009	.122	-.109
q_21_CO001	.626	-.130	.034	-.008	.115	-.015	-.471	-.370
q_21_CO002	.612	.002	-.068	-.042	.122	.069	-.496	-.317
q_51_DP003	.604	-.366	-.045	-.127	-.211	-.402	.067	.026
q_41_SM003	.595	.306	-.331	-.187	-.257	.252	.025	.077
q_51_DP004	.592	-.338	.062	-.183	-.138	-.323	-.060	.041
q_01_RM005	.584	-.219	.100	.058	.242	-.278	.206	-.026
q_51_DP005	.570	-.268	-.252	.063	-.016	-.233	.086	-.028
q_41_SM004	.568	-.125	-.019	.195	.270	.060	.140	.214
q_31_DC001	.557	-.427	-.146	.072	.094	.100	.181	.056
q_51_DP001	.554	-.339	-.229	-.351	.069	-.255	.036	.122
q_21_CO003	.541	.232	.053	.273	.234	-.101	-.297	.151
q_21_CO007	.535	-.399	-.302	-.064	-.036	.240	-.135	.109
q_01_RM007	.527	-.041	.479	-.072	-.090	.109	-.102	.403
q_01_RM006	.516	-.386	.133	-.111	.270	-.184	.160	.066
q_31_DC002	.496	.123	-.090	.270	.101	.432	.160	.012
q_51_DP006	.483	.358	-.031	-.081	-.137	-.107	.222	.249
q_41_SM001	.481	.423	-.304	-.292	.005	-.011	.171	-.116
q_01_RM001	.464	-.316	.231	-.246	-.213	.240	.069	-.052
q_01_RM002	.455	-.220	.273	-.211	.271	.304	.326	-.206
q_31_DC007	.348	-.247	-.189	.331	.209	.143	.066	.347
q_41_SM005	.478	.668	-.121	-.349	-.052	.186	-.108	.017
q_01_PR003	.175	.616	.422	.189	.068	-.113	.296	.019
q_41_SM006	.487	.609	-.146	-.320	-.092	.226	-.095	.130
q_01_PR005	.338	.595	.232	.253	-.053	-.190	-.206	-.066
q_51_DP007	.368	.577	-.056	.027	-.046	-.226	.196	.188
q_31_DC004	.400	.529	-.128	.317	.343	.099	-.045	-.050
q_51_DP008	.400	.416	-.058	-.055	.262	-.304	.184	-.083
q_01_RM009	.315	-.163	.629	-.079	-.012	.183	-.197	.269
q_01_RM008	.386	-.230	.507	-.192	-.126	.256	-.230	.010
q_01_PR002	.255	.105	.501	-.148	-.071	.000	.257	-.208
q_01_PR001	.289	.424	.484	-.145	.271	-.280	-.063	-.048
q_11_MS003	.397	.010	.181	.590	-.381	-.045	.231	-.120
q_11_MS002	.341	-.140	-.025	.470	-.302	-.048	.241	-.323
q_31_DC003	.360	-.365	-.027	.381	.182	.137	-.032	.336
q_11_MS004	.350	.002	-.006	.427	-.627	-.044	-.198	-.013
q_11_MS005	.521	.292	-.065	-.032	-.574	.203	.037	.089
q_31_DC006	.311	.247	-.148	.265	.394	.333	.030	-.139
q_51_DP010	.521	-.064	-.036	.178	.107	-.087	-.549	-.128
q_01_RM003	.388	-.243	.191	-.038	.016	.367	.338	-.402

Extraction Method: Principal Component Analysis.
a. 8 components extracted.

Confirmatory Factor Analysis – RM Key Three Factors Model Fit

Model Fit Summary
CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	28	68.575	50	.042	1.371
Saturated model	78	.000	0		
Independence model	12	308.913	66	.000	4.680

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.096	.871	.798	.558
Saturated model	.000	1.000		
Independence model	.300	.524	.437	.443

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.778	.707	.928	.899	.924
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.758	.589	.700
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	18.575	.794	44.398
Saturated model	.000	.000	.000
Independence model	242.913	191.991	301.375

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.914	.248	.011	.592
Saturated model	.000	.000	.000	.000
Independence model	4.119	3.239	2.560	4.018

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.070	.015	.109	.208
Independence model	.222	.197	.247	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	124.575	136.317	189.835	217.835
Saturated model	156.000	188.710	337.797	415.797
Independence model	332.913	337.945	360.882	372.882

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	1.661	1.424	2.005	1.818
Saturated model	2.080	2.080	2.080	2.516
Independence model	4.439	3.760	5.218	4.506

HOELTER

Model	HOELTER .05	HOELTER .01

| Default model | 74 | 84 |
| Independence model | 21 | 24 |

Execution time summary
Minimization:	.000
Miscellaneous:	.469
Bootstrap:	.000
Total:	.469

6-22 Regression Analysis: Pricing Methods & Tactical levels of RM

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.544[a]	.296	.246	.82390

a. Predictors: (Constant), Average_CO, Average_MS, Average_SM, Average_DC, Average_DP

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	19.986	5	3.997	5.888	.000[b]
	Residual	47.517	70	.679		
	Total	67.502	75			

a. Dependent Variable: Pricing Methods

b. Predictors: (Constant), Average_CO, Average_MS, Average_SM, Average_DC, Average_DP

Coefficients[a]

Model	Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1 (Constant)	2.801	1.098		2.550	.013		
Social Media	.486	.125	.440	3.873	.000	.781	1.281
Dynamic Pricing	-.525	.188	-.340	-2.791	.007	.677	1.478
Distribution Channels	.060	.149	.048	.406	.686	.709	1.410
Market Segmentation	.125	.130	.103	.960	.340	.871	1.148
Competition	.315	.161	.247	1.960	.054	.635	1.576

a. Dependent Variable: Pricing Methods (PR)

Appendix D – Statistics Chapter Seven

7-1 Initial Exploratory Factor Analysis of Social Media Relationships

Rotated Component Matrix[a]

	Component			
	1	2	3	4
q_51_DP003	.843	.039	.000	.067
q_51_DP004	.783	.035	.029	.097
q_51_DP001	.756	.148	.052	-.082
q_51_DP009	.698	.138	.161	.282
q_51_DP005	.650	.035	.271	.097
q_41_SM002	.572	.436	.217	-.104
q_31_DC001	.553	.034	.514	-.179
q_31_DC009	.483	.181	.419	-.111
q_31_DC005	.454	.294	.442	.000
q_41_SM006	.013	.815	.082	.189
q_41_SM005	.003	.807	.026	.303
q_41_SM001	.187	.782	.025	.034
q_41_SM003	.275	.682	.219	.018
q_51_DP007	.024	.562	-.027	.415
q_51_DP008	.114	.545	.031	.286
q_51_DP006	.272	.476	.023	.325
q_31_DC008	-.123	.421	.341	-.320
q_51_DP002	.190	.392	.273	-.243
q_31_DC006	-.192	.262	.629	.179
q_31_DC003	.279	-.210	.625	-.057
q_31_DC002	.072	.254	.613	.152
q_31_DC007	.203	-.058	.609	-.071
q_41_SM004	.313	.113	.550	.143
q_31_DC004	-.165	.398	.459	.459
q_51_DP010	.342	-.037	.352	.343
q_01_PR005	-.051	.226	.043	.798
q_01_PR003	-.226	.289	.020	.643
q_01_PR004	.125	-.191	.233	.575
q_01_PR001	.059	.274	-.119	.574
q_01_PR002	.151	.096	.007	.346

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 9 iterations.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.684
Bartlett's Test of Sphericity	Approx. Chi-Square	1226.241
	df	435
	Sig.	.000

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.265	24.216	24.216	7.265	24.216	24.216	4.625	15.418	15.418
2	4.069	13.563	37.779	4.069	13.563	37.779	4.528	15.094	30.512
3	2.125	7.084	44.863	2.125	7.084	44.863	3.276	10.919	41.431
4	2.027	6.757	51.620	2.027	6.757	51.620	3.057	10.190	51.620
5	1.535	5.115	56.736						
6	1.403	4.677	61.412						
7	1.293	4.310	65.722						
8	1.087	3.624	69.346						
9	.980	3.268	72.614						
10	.906	3.021	75.635						
11	.835	2.782	78.417						
12	.745	2.484	80.900						
13	.698	2.325	83.226						
14	.627	2.089	85.315						
15	.590	1.967	87.282						
16	.505	1.682	88.964						
17	.454	1.515	90.479						
18	.426	1.418	91.897						
19	.362	1.205	93.102						
20	.340	1.134	94.236						
21	.299	.996	95.232						
22	.272	.908	96.140						
23	.235	.782	96.922						
24	.212	.707	97.629						
25	.190	.634	98.263						
26	.137	.458	98.720						
27	.131	.436	99.156						
28	.113	.377	99.533						
29	.076	.254	99.787						
30	.064	.213	100.000						

Extraction Method: Principal Component Analysis.