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Managerial Process Of Discount Decision-making In The Lodging Industry: The Role Of Human Agency

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MANAGERIAL PROCESS OF DISCOUNT DECISION-MAKING IN THE LODGING INDUSTRY: THE ROLE OF HUMAN AGENCY

by

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ABSTRACT

Management faces a paradox in managing discrepancies between actual demand and expected demand in daily operations, thereby requiring constant adjustments in pricing under the supervision of management in the short term. The purpose of this study is to determine how discount choices are created and to understand information processing related to the pricing and discounting decision-making process as well as narrating the events, stages, and cycles of choices made by hotel managers. This study also determines the role of human judgment based on contextual factors in the decision-making process.

This mixed methods research design consists of three steps: observation, classification, and association. First, the observation stage includes the careful observation, documentation, and measurement of the phenomena within the social and institutional context through structured interviews with hotel managers. Second, abstractions are classified into categories based on the attributes of the phenomena. Information attributes are categorized into static and dynamic information, and the source of information is characterized in external and internal sources. Third, the association between the category-defining attributes and the outcome observed (discount or not) is explored using conjoint analysis. This last stage attempts to investigate not only the importance of information attributes, but also the role of social-, institution-, and human agency-related influences in managers' discounting decisions.

The major findings of the study are as follows. First, habitual practices are identified to show how the classification of events, activities, and institutions are put into practice as managers have developed their own knowledge and practices over time. Such practices become

routine over time when managers encounter a similar problem, disequilibrium. Conventions such as the “less than 35 rule,” the “80:20 rule,” the call around, following suit, and trial and error are manifestations of the coping strategy for the hamstrung complexity in the hospitality industry. Human agency and its perception of reality within a specific context infuse meaning into business practices. The critical role of managers is recognized in making discount decisions as they use a collection of complex patterns in the lodging industry to perceive meaningful patterns in the environment to make a final judgment.

The focus on the process of discount decision making allows for detecting how environmental stimuli are watched by managers with deeply held views. Managers use certain rules and patterns to complete their information search. Hotel managers place different values on the information attributes in making a discount choice. The average importance of an attribute represents how important it is to managers when making their discount choices. The results indicate that managers consider the booking window to be the most preferred information, followed by competitors’ room rates, the potential for cancelation, and occupancy rate.

A discount choice is the product of human agency and social forces over time, distinct from the rational model. Different hotel operation structures and human agencies seek to make a difference in the process of discount decision making. Hotels in *Road Warriors*, which are smaller in size, are not located near major attractions but seem to fill the need for leisure travelers passing by the highways. Less competition exists because the regional area does not serve as a main attraction. These hotels in *Road Warriors* thus place great importance on the booking window and potential for cancellation when considering offering a discount. If they do

not see enough reservations in the short term and foresee the potential for cancellation, hotels in *Road Warriors* tend to make a discount choice. These hotels do not seem to indulge in implementing other pricing strategies, but do drop the rate.

Hotels in *Stars in the Universe*, which are larger in size and affiliated with chains/brands, are located near the main attractions (e.g., beach, downtown, or convention center). Hotels in *Stars in the Universe* consider the booking window to be the most critical information, followed by competitors' room rates, occupancy rate, and potential for cancellation. The extent of how much time is left before an arrival date serves as the most important piece of information in making a discount choice. These hotels emphasize knowledge of competitors' room rates as these hotels have many competitors around and consistently compete for more market shares in the area.

Moreover, human agency, mostly grounded in industry tenure and age, determines how managers process discount choices. M*arket Movers* consists of more experienced and educated, older, and predominantly male experts. These general managers, assistant general managers, or revenue managers have gained knowledge and know-how during their extended experience in the industry. Managers in *Market Movers* focus importance on the booking window, followed by competitors' room rates, occupancy rate, and potential for cancellation. They monitor bookings ahead of time and consider offering a discount as the arrival nears. Managers in *Market Movers* also show great concern for competitors' room rates. They compare their rates to competitors' in order to ensure that their own rates do not go over competitors' room rates.

Managers in *Entourage* are considered to be younger, less experienced, and less educated. Most managers in *Entourage* work in marketing/sales or front desk/operations and tend to follow and attend to the industry leaders. These novices try several trials and make errors along the way, but become rising stars in the industry when their trial-and-error approach succeeds. *Entourage*'s discount choice is influenced more by the booking window, followed by potential for cancellation, competitors' room rates, and occupancy rate. Managers in *Entourage* consider the booking window to be the most critical in making a discount choice, and they act quickly to offer a discount when an arrival date nears. They tend to respond to immediate changes in booking; thus, the potential for cancellation determines the discount choice among *Entourage* managers.

The main theoretical contribution of this study is to demonstrate that managerial frameworks based on a rational premise are not complete. These frameworks should be complemented with a human judgment framework, which provides a richer account of how managers in the lodging industry approach complex price-setting situations. Managerial discounting decision making often falls short of the purely rational model for managers and is bounded by nature. Managers are not always rational in compiling and assessing information leading to discounting that is compatible with the accessibility to information and the computational capacity. The human judgment process, discovered and examined in this study, provides a richer understanding of the process of discounting in the lodging industry. This process is featured by a non-conscious processing of information; the retrieval of the information is based on associations of patterns; the context in which this processing occurs is high paced; and the outcome of the decision is imbued with judgments.

In terms of managerial implications, this study enables hotel managers to learn under what conditions other managers consider making discount choices. Information attributes such as the booking window and competitors' room rates are thought to be more valuable than other information. Managers should observe booking windows carefully when making a discount choice. Managers should pay close attention to bookings more in advance so that they detect discrepancies between forecasting and reality in a timely manner. If so, managers can make operational adjustments to rate strategies by controlling not only room rates, but also length of stay (LOS) and channels. Limitations and suggestions for future research are also discussed.

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Not that I have already obtained all this, or have already arrived at my goal, but I press on to take hold of that for which Christ Jesus took hold of me. Brothers and sisters, I do not consider myself yet to have taken hold of it. But one thing I do: Forgetting what is behind and straining toward what is ahead, I press on toward the goal to win the prize for which God has called me heavenward in Christ Jesus.

Philippians 3:12-14

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CHAPTER ONE: INTRODUCTION

Introduction

The purpose of this study is to determine how discount choices are created and understand the information processing related to the pricing and discounting decision-making process; it will also narrate events, stages, and cycles of choices made by hotel managers and determine the role of human judgment based on contextual factors in the decision-making process. This first chapter will explore background information to provide the readers with an overview about the role of discounting in the lodging industry. Potential concerns pertaining to analytical models embedded in a positivist approach of the discounting literature are discussed. Then, the discounting decision-making process is viewed from a constructionist approach. This discussion recognizes the concept of human agency as a key player in the process of discounting decision making as managers identify disequilibrium, assess the relevant information, and make a final discount choice. A statement of the research problem and the purpose of the study follow. After a brief description of the theoretical framework, the methodology will be discussed. Finally, the significance of the proposed study is considered with respect to its potential theoretical and practical contributions, followed by an inquiry of the study's limitations.

Background

Discounting is a necessary evil. No one wants to discount, but ultimately everyone does. To cope efficiently with the economic environment and competitive market, hotels cannot afford to neglect discounting as a competitive option, and today's hotels discount even more

aggressively than in the past (Hanks, Cross, & Noland, 2002; Kimes, 2009). The present study defines discounting as a reduced price from an initially set price. Hotels often set their initial room prices in advance based on expected demand on a specific date. To forecast demand accurately, hotel managers assess the relevant information, which includes historical demand analysis and the reservations inventory (Jauncey, Mitchell, & Slamet, 1995). If hotels precisely forecast demand for a particular arrival date, they are able to sell all rooms available at the initial set rate. However, hotels often face an unpredictable and uncertain business environment that makes it difficult for them to forecast demand and set the optimal room prices (Phillips, 1999). Due to the perishability of room products, hotels deal with a finite horizon for selling the rooms before an arrival date (Ghalia & Wang, 2000). In addition, demand for each room constantly changes and is often segmented by different customer groups, each with different price elasticity and profitability, which makes forecasting even more uncertain and challenging for hotel managers (Dutta, Zbaracki, & Bergen, 2003).

This process of pricing highlights deviations from the forecast (Jauncey et al., 1995). Given the difficulty and uncertainty of forecasting demand, hotels end up facing discrepancies between expected demand and actual demand. Every time a discrepancy between an expectation and an actual business occurs, hotels incur a loss in revenue. In such situations, the application of a price change adjusts forecasted levels of demand in relation to the actual rate. Thus, in order to fill rooms that unexpectedly remain unsold, hotels are forced to make price adjustments by lowering the room rate (Croes & Semrad, 2012; Kalnins, 2006).

In making adjustments in pricing, human judgment matters. Management takes control of identifying a problem, collecting and interpreting information, and finally making a decision. Although hotel managers continuously monitor the reservation activity, they are often confronted with vacant rooms to fill. Managers see the downward-sloping demand curve, which can be identified as a situation in which management needs to adjust room rates in order to maintain equilibrium between demand and booking activity. Hotel managers constantly change room rates through either markdowns or markups in response to actual demand emerging from the dynamic nature of the lodging market. Not every hotel manager decides to lower a room rate. A price change decision stems from an ongoing process of gathering and interpreting information. After managers perceive that they have enough information to validate or disprove a problem, they make a final call as to whether to discount or not.

Human judgment is a product of a social context and is socially constructed. Processing the relevant information involves not only individual agency, but also environmental social forces in which management selects and interprets the relevant information. For example, managers call around to their competitors and learn about their occupancy and room rates via telephone (Kalnins, 2006). Nowadays, the internet enables hotels to access their competitors' websites and third-party websites, so learning about competitors' room rates has become a daily routine for managers. Seeking how others set room rates implies that social forces influence how managers make their own price decisions. Although the literature often fails to discuss the underlying concepts of price change decision making, this study attempts to delineate a set of information determinants that underpin the process of discounting in the lodging industry. In this

respect, this study asks new questions and explores new grounds with regard to price setting in the lodging industry.

Problem statement

The decision-making process is significant as it gives rise to explanations with an emphasis on the process of thinking (Smallman & Moore, 2008). Processes refer to sequences of events, stages, or cycles of decisions and choices made by an entity. Processes narrate emergent actions and activities that are done by human agency in the field. Beyond the act of selecting the most desirable alternative or outcome of making a decision, this learning process portrays a real system, identifying the internal and external factors influencing price decisions within the lodging industry (Jones, 1999). In other words, this process completes a rich picture of the situation from which patterns emerge.

A focus on process is grounded on two main premises. First, process provides rich information as it enhances the understanding of how things work. Through processes, managers learn patterns of relations between the parts and the whole (Wilber & Harrison, 1978). Attention is focused not only on the activity of key actors, but also on how these activities relate to the wider context of the lodging industry (Mattimoe & Seal, 2011). Human cognitions and habits embedded in specific institutions shape how prices are actually formed in specific institutional contexts (Hodgson, 1998; Mattimoe, 2007; Mattimoe & Seal, 2011; Phillips, 2012; Phillips, Lawrence, & Hardy, 2004). For example, managers form a pattern of assessing information and making decisions over time. When faced with a similar problem, they follow the habitual patterns and make the same choice within an institutional context.

Second, the means of processing information involves management's judgment in selecting, interpreting, and responding to information. Not everyone makes a good decision, and some make better decisions than others. In similar circumstances, some managers make better strategic choices than others, resulting in better outcomes (Bourgeois, 1984). For example, same brand hotels within the same geographical location receive similar reports from the corporate revenue management department. However, their performance seems to deviate. Management judgment makes a difference in processing information, thereby affecting the choices they make including decisions about discounting.

On the other hand, in the lodging industry, how management reads and interprets signals and subsequently acts upon them has not been discussed, and the underlying concepts of the discounting decision-making process have not been communicated. The literature fails to explain the process of the shift from one price level to another, even though the shift does not occur automatically. For example, a search using EBSCO Hospitality and Tourism Complete only delivered three articles directly related to price, hotel, management, and processes. As of April 29, 2013, 441 articles have been published using the terms "price or discount" and "hotel or lodging" since 2000. When the additional terms "manager or management" and "process" were added, only 29 articles were found. After a careful review of these 29 articles, even fewer studies were found to directly address the managerial pricing process in the lodging industry (e.g., Ivanov & Zhechev, 2012; Kim, Han, & Hyun, 2004; O'Connor & Murphy, 2008).

Despite a heightened interest in addressing the subject of price and discount, a dearth of studies exists in relation to the process of price setting from management's point of view. Most

hospitality studies are outcome related in terms of determining attributes that explain a phenomenon. Also, outcome-related studies heavily rely on analytic theories based on a positivistic approach. The positivist approach embraces a rational presumption of the manager in compiling and assessing information leading to price setting, including discounting. In addition, the positivist approach relies on the effective functioning of the market mechanism.

The rational decision-making process can be hampered by the time inconsistency facing a manager. When setting initial prices, the manager has to decide on prices today while relying on demand projected for the future. The distance between the present and the future is exacerbated by the perishability of the production of hotel rooms. In addition, the market mechanism could contain a lot of noise induced by market structures, information asymmetries, and institutional weaknesses. Therefore, the gap between intention and actual implementation could be quite large.

Focusing on processes can provide insights into the gap between intention and consequence and the subsequent factors that influence the process. Management needs to take into account social, institutional, and human elements in order to understand this nature and the extent of the gap. For example, social factors determine the process. Hotels constantly monitor how their competitors are doing and compare their performance to the market share. If competitors make an unexpected change in pricing strategies, hotels tend to follow their competitors, especially when the moment in time involves high uncertainty and limited time to collect information. Similarly, institutional factors define the rules of engagement. A different hotel structure affects the way management engages information and makes a decision. Larger

hotels involve multiple people in the decision-making process, and achieving a consensus among many people can be more challenging compared to smaller hotels, which involve fewer people (i.e., one owner or general manager) and tend to have more freedom and flexibility in making discounting decisions at the operational level.

Academic studies examining the process of how discounting really works are lacking, which limits both scholars' and practitioners' ability to gather appropriate information and make strategic price decisions. Hotel companies are aware of the discretion of managers in price setting. The emergence of yield management is a clear illustration of corporations attempting to gain more control in the price-setting process. However, yield management exhibits the same challenges as it misses out on social, institutional, and human influences. Yield management underestimates the subjective and human element in the price-setting process (Ivanov & Zhechev, 2012). Cross and his colleagues (2009, p. ##) viewed hotel pricing as being subjective, stating that "central revenue management and brand strategists will recommend price guidelines to the individual properties, [but] it is often still the province of the individual hotel to make the final call." The way information is presented on the yield management software interface significantly influences the decisions ultimately taken by managers (Schwartz & Cohen, 2004). Revenue management technologies and tools guide managers in setting a price, but managers are the ones who constantly process the relevant information and make the final decisions.

At an individual hotel, a price decision is one of the main concerns for management. Yet the process of making price decisions remains a black box in the current literature, as presented in Figure 1. By knowing the processes, the collective efforts of management research produce a

deeper understanding of theory that is intellectually rigorous, practically useful, and effective during changing times and circumstances (Carlile & Christensen, 2005; Hayes, 2002; Simon, 1976; Solow, 1985; Sutton & Staw, 1995). Thus, mapping out the process of how managers make discounting decisions enhances the understanding of discounting in the lodging industry as it not only involves choices that management makes, but also considers the interaction with the internal and external environment.

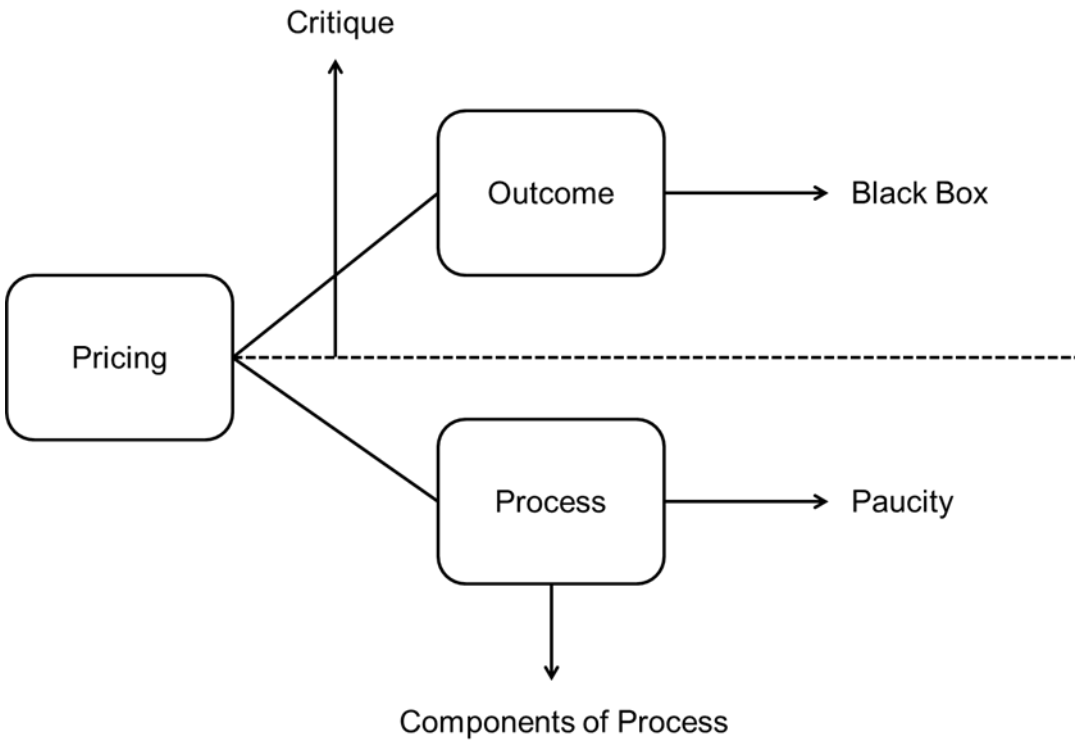


Figure 1 Study justification

Purpose of study

The purpose of this study is threefold: (1) to determine the creation of a discount choice and the corresponding information processing related to the decision making; (2) to narrate

events, stages, and cycles of choices made by hotel managers; and (3) to determine the role of human judgment based on contextual factors in the decision-making process.

The outcome of the study contributes to the identification of habitual management practices and enhances the understanding of how management's knowledge is constructed and how this knowledge is applied to justify actions and choices. Identifying these habitual practices also sheds some light on how the classification of events, activities, and institutions are put into practice and become routines over time. Shifting the unit of analysis from the outcome to the process basis is relevant in two aspects. The focus on process as the unit of analysis enables direct observation by the researcher and, consequently, provides a rich reporting of experiences. In addition, direct observation also facilitates a deeper look into the black box resulting from the positivist perspective in assessing discounting.

Theoretical framework

Shifting from outcome to process as the unit of analysis requires a revisit in framing the question. The shift includes a moving away from *what* choices occur to *how* choices occur. The ontological focus therefore becomes the process revealing how choices are made and how these choices turn into tacit routines when hotel managers frame their business reality. Consequently, this study is undergirded in two theoretical frameworks: the constructionist approach and the process approach. These approaches reveal several common characteristics. First, both consider human agency as the driver in shaping the choice process. Second, both eschew rationality as the only motivation of a person's choice; they consider beliefs, norms, and perceptions as shapers of decision-making behavior. Finally, both look into the choice framework as a process that ranges

from pre-choice to choice and post-choice; the interdependencies among these stages are recognized as important as they lead to a final choice. In this study, the constructionist approach outlines the procedural steps undertaken whereas the process approach explains the conceptual underpinning patterns of the process of price setting in the lodging industry.

First, the constructionist approach commences with the knowledge of organizations and strategies shaped in social processes, where the truth of any concept, statement, or argument is dependent on its coherence with generally held beliefs and values (Durand & Vaara, 2006). A choice, such as whether to discount or not, is the product of human agency and social forces over time. Human agency and its perception of reality within a specific context infuse meaning into business practices. Thus, the constructionist approach filters which aspects of the context matter in the construction of a specific choice by retrieving subjective accounts of those involved in the process in generating and sustaining patterns, procedures, and routines. Reflections around emergent strategies relying on influences such as institutional and social surroundings should be taken into account in order to explain a phenomenon (Mintzberg, 1994). In specific settings, management is the center of the argument as human judgment distinctively interprets the nature of social phenomena. Management leads the process of price changes in order to meet actual business needs.

The second theoretical framework guiding this study is process theory. In assessing processes, the focus is not on "what hotels seek to do but how they go about it" (Jones, 1999, p. ##). Process theory, often called systems theory, is descriptive and explanatory in nature as it

pertains to how the systems can receive, store, transform, and retrieve information as well as how the systems react to sensory input from the environment with behavior output.

Process theory provides an adequate explanation of the phenomena (Child, 1972; Dean & Sharfman, 1996; Hitt & Tyler, 1991). According to Checkland (1981), process begins with a mess, but involves a rich picture of the situation from which patterns and habitual behaviors emerge. Process theory comprises steps staged in a progressive course as a dynamic and interrelated unity of decision stages (Zeleny, 1982). In each step of the process, two sequential parts of a phenomenon, where each breakpoint shows variations in the pattern of behavior, group together; each point identified accounts for these variations (Glaser, 1978). In the lodging literature, the process of pricing defines how, when, where, why, who, and what decisions are taken (Yeoman & Watson, 1997). In addition, Jones (1999) grounded his study in systems theory, which assumes the model depiction to be a real system, identifying the internal and external factors influencing the system. Although Jones's (1999) study provided a conceptual picture of a hotel's yield management system, it overlooked the role of management, who are in charge of forming the system. Moreover, the systems model is limited to an illustration of an initial set of yield management and does not cover situations when a price change needs to be made, which is the most critical task in pricing for managers.

Given the past definitions, this study defines processes as sequences of events, stages, or cycles of decisions and choices made by an entity. Processes describe emergent actions and activities by individual or collective actions in the field. As shown in Figure 2, the process describes the general sequence related to how hotel management processes information as an

arrival date nears, responding to market equilibrium, social contexts, institutions, and management-related influences. Over time, the choice that managers make becomes routine.

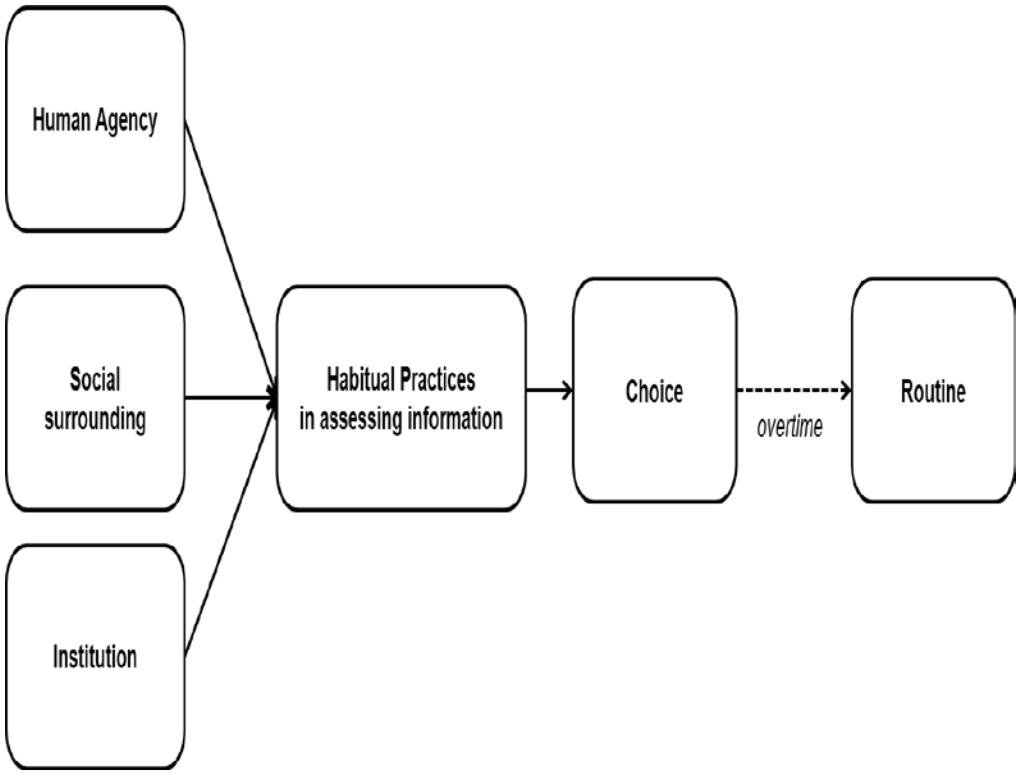


Figure 2 Process as a unit of analysis

Research questions

The decision-making system involves two functions: strategic decisions and operational decisions (see Figure 3). In the long term, strategic pricing decisions are made related to market segmentation and pricing policies (Jones, 1999). At the strategic level, the notion of discounting is already embedded in forecasting. Examples of strategic decisions include discount packages designed to target price-sensitive consumers. During this pre-implication, certain attributes are identified and used to segment groups. Once the distinguishing feature of a market segment is

defined, hotels set appropriate discounts for designated groups, such as seniors or government officials. Such discounts are planned ahead and offered to those consumers who would not purchase the product otherwise. Strategic discounting decisions are also influenced by certain drivers in the external environment, such as weather. For example, ski resorts in Colorado offer discounted rates during summer. In other words, room prices during low seasons are already set to be lower than those during high seasons; forecasting tools are utilized to determine such outcomes. In strategic decision making, discount decisions take place in conjunction with sophisticated forecasting. In fact, management has little to do with making price changes during the pre-implications at the strategic level.

On the other hand, in the short term, managerial operational decisions are associated with daily operations and the implementation of pricing techniques (Jones, 1999). The present study focuses on making operational discount decisions in which management adjusts price markdowns during the implication of pricing strategies. Discount is defined as a reduced rate from an initially set price. Errors arise in forecasting due to time inconsistency and the dynamic business environment, and hotels end up facing discrepancies between expected demand and actual demand. Every time a discrepancy between an expectation and an actual business occurs, hotels incur a loss in revenue. In such situations, the application of a price change adjusts the forecasted levels of demand in relation to the actual rate. Thus, in order to fill rooms that unexpectedly remain unsold, hotels are forced to make a price adjustment by lowering the room rate in the short term (Croes & Semrad, 2012; Kalnins, 2006).

Although a dearth of studies relate to the process of actual implication, the scope of studies has been centered on the discounting decision-making process during the implication. The paradox in managing a discrepancy between actual demand and expected demand results in critical problems that management faces in daily operations. Constant adjustments in pricing are required under the supervision of management in the short term. If reality outperforms expectations, management will not worry as much as when they see reality performing less well than expected. A low occupancy rate often serves as an indicator for such conditions, and managers need to adjust rates in response to actual performance. In making changes in pricing, transient demand is often targeted for discounting because transient demand tends to be price elastic in that a change in price leads to a greater change in demand. Thus, the present study focuses on operational discount decision making during the implication process guided by short-term objectives.

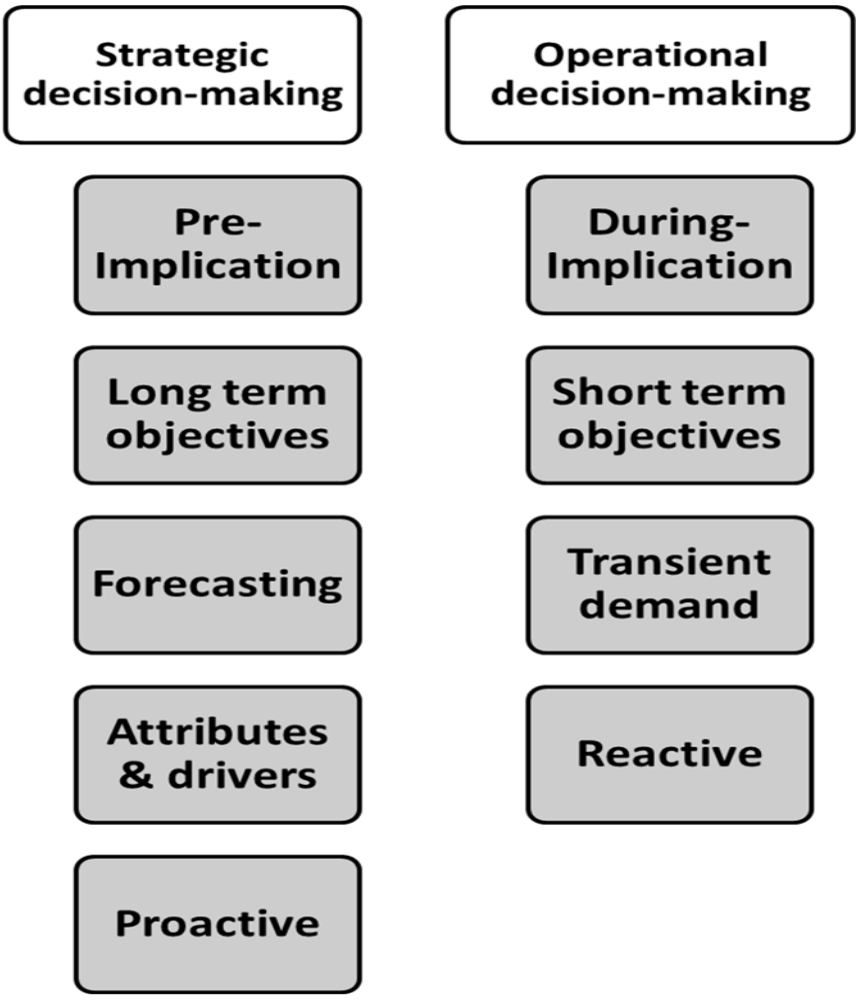


Figure 3 Scope of study

Hotel managers frequently face a problem when discrepancy between expected demand and actual demand occurs. Managers are forced to consider making adjustments in room rates. The research questions to be addressed are as follows: (1) At what signals should managers start considering a change in price? (2) What are the key information attributes needed to make discounting decisions? (3) How do external and internal forces influence how management processes information and makes discounting decisions?

Methodology

The research design consists of three steps—namely, observation, classification, and association—following Carlile and Christensen's (2005) suggestion for the process of theory building. In the observation stage, careful observation, documentation, and measurement of the phenomena within the social and institutional context were done through structured interviews with hotel managers. Interviews were set up to detect the process of identifying a problem, acquiring relevant information attributes and the source of information, and selecting discounting decision making from among the alternatives. At this stage, the phenomena were explored through not only information attributes, but also time components.

In each stage, questions such as who are involved in the decision, where the information comes from, and how managers come to an agreement on a discount choice were explored in order to develop a complete picture of the discounting decision-making process. The premise at this stage was that managerial decision making in pricing is part of the organizational rules and routines; at the same time, individual managers seek to make sense of their actions and the actions of others (Scapen, 2006).

After the observation and description of the phenomena obtained through the interviews, the abstractions were categorized according to the attributes of the phenomena in the second stage. Categorization schemes were appropriate for simplifying and organizing pricing activities in ways that highlight relationships between the phenomena and the outcomes of interest. Information attributes were categorized into static and dynamic information, and the source of

information was characterized in external and internal sources. Finally, the moment in time when each information attribute influences the process was recognized.

In the third step, the association between the category-defining attributes and the outcome observed (discount or not) was explored using conjoint analysis. In theory building, this association stage helps researchers recognize which attributes relate most strongly with the patterns in the outcomes of interest. After information attributes were identified in the previous stages, a survey was administered in which a sample of hotel managers was exposed to different situational scenarios. This third step of the study attempted to investigate not only the importance of information attributes, but also the role of social, institution-related, and human agency-related influences in managers' discounting decisions.

Significance of the study

The main contribution of this study stems from shifting the locus of the analysis of hotel price setting from *outcome* to *process*. Changing the locus of analysis is not a question of cosmetics; rather, such a change has deeper epistemological implications with regard to the research question. This study moves away from looking at a few factors that could influence a discount choice to a more constructionist approach. The latter implies looking at how managers make sense of discounting in specific contexts and settings as well as what implications this has for price setting.

Process as the unit of analysis provides a rich, contextual foundation for deeper knowledge of and insights into how specific price decisions occur. Past literature has failed to

capture rich interactions on managers' decisions in discounting; thus, the proposed framework of pricing goes beyond market equilibrium stemming from economic theories to include other influences, such as social surroundings, institution, and management. For example, institutional economics recognizes that human behavior and cognition shape a distinctive view of prices (Mattimoe, 2007; Mattimoe & Seal, 2011). Price decisions are made around social activities, and such decision-making behavior is considered to be a particular type of social interaction and outcomes of economic interaction with a society (Phillips, 2012).

A positivistic view derived from analytical theories is not sufficient for reflecting a comprehensive picture of business practices. A constructionist approach reveals the knowledge of organizations and strategies shaped in social processes, where the truth status of any concept, statement, or argument is dependent on its coherence with generally held beliefs and values (Durand & Vaara, 2006). If the analytical, institutional, and social components of the pricing decisions are examined together, the pricing literature will close the gap between analytical theory and actual business, thereby reflecting a more comprehensive picture of pricing practice.

By adopting constructionist and positivistic approaches, mixed-method techniques are utilized to expand the scope and improve the analytic power of the study; such a mixed method design combines techniques that more closely resemble what researchers actually use in practice (Johnson & Onwuegbuzie, 2004). Its central premise is that the use of quantitative and qualitative approaches in combination provides a better understanding of research problems than either approach alone (Creswell & Clark, 2007). When two or more independent methods are found to be compatible and give way to similar data, a cross-validation process is ensured as the

variance reflects the trait, not the method (Campbell & Fiske, 1959; Jick, 1979). In particular, McKercher, Law, and Lam (2006) reviewed 12 major tourism journals and found that the majority of articles (59%) adopted quantitative research designs, with surveys being the most frequently used (39%). A much lower proportion of articles adopted a qualitative (19%) or mixed method approach (6%). Thus, the current study contributes to the body of knowledge, especially in the tourism and hospitality field, as the combination of the qualitative and quantitative techniques in mixed methods research often results in better research when compared to mono-method research (Johnson & Onwuegbuzie, 2004).

Limitations of the study

A constructionist position can be problematic as theories are accepted as true as long as they are coherent to actual business, yet it involves the risk of ontological relativism due to an inability to distinguish between more or less true theories or propositions (Durand & Vaara, 2006; Huber & Mirosky, 1997). Although a constructivist approach builds an argument by pointing to the futility of trying to establish causal relationships that are context dependent and complicated by the ongoing constructions of the social actors, it is difficult to analyze any phenomena without notions such as causal explanation. Thus, this study extends its argument beyond observation and categorization and includes a survey that explores the nature of the interface and the impact of social, institutional, and human influences on the process of a discount choice.

From the interviews, multiple information attributes for a discount choice were obtained. Internal and external factors chosen to represent the environment might not capture the complete

picture of the price decision-making process. Thus, future studies on more elaborate concepts and measures of the process can be explored. Finally, researchers are only able to directly observe the underlying structures, processes, and mechanisms at play to a certain degree. For example, it is difficult to capture the cognitive cost of management processing the information (Hitt & Tyler, 1991). Despite these limitations, efforts were made to shed light on the process of discount decision making in the lodging industry, and the current study could serve as a pioneer study that provides an illustration of how human agency plays a role in this process.

The following sections will first present a discussion of pricing, identifying the key characteristics of the lodging pricing to be included in the study. Next, the conceptual discussion on the process and the decision making will be presented. A perspective on the role of human judgment beyond rational judgment will then be presented, followed by the research methodologies and results. The conclusions will focus on the discount decision-making process and the role of human judgment based on contextual factors as well as its implications on information processing during discount decision making in the lodging industry.

CHAPTER TWO: LITERATURE REVIEW

Introduction

This chapter covers the existing literature on pricing in the lodging industry and the process of a price change activity pertaining to the elasticity of demand and the time component. The discussion then leads into the significance of focusing on processes and the role of human judgment in assessing information and making a final decision. A review of research in pricing in relation to market equilibrium, institution, and social surroundings is provided. Finally, the last part of the chapter describes how the dynamics of the lodging industry affect the discounting decision-making process. The internal and external environmental factors of price change are reviewed to provide a rich picture of discounting decision-making behavior.

Pricing in the hotel industry

Pricing plays a key means by which a firm sets an appropriate value through market-based tradeoff, where price is defined as the sum of the values consumers exchange for the benefits of having or using the product or service (Becerra, Santalo, & Silva, 2012; Indounas & Avlonitis, 2009; Kotler, Bowen, & Makens, 2008; Pellinen, 2003). The importance of understanding pricing has garnered attention for mainly two reasons. First, price is the only marketing mix element that generates revenue. Other elements of marketing mix, such as product, promotion, and place, involve expenses. Second, a mistake in pricing can lead to a business failure. Costs are involved in running a business, and if firms do not generate enough revenue to maintain the operation, they will eventually go out of business. Charging too much

chases away potential customers whereas charging too little can run the risk of a company failing to collect enough revenue to continue operations. Thus, the ability to set the right price reflects the capability of a firm to generate revenue.

Despite the importance of understanding pricing, pricing has been the least understood of the marketing variables (Kotler et al., 2008) and an underdeveloped research stream (Hoffman, Turley, & Kelley, 2002). Pricing decisions in most industries are confusing, as a great variation occurs among industries and even among different companies within the same industry (Phillips, 2012). In fact, in many cases, only insiders fully appreciate how prices are set, communicated, evaluated, and updated within their industry (Phillips, 2012). Therefore, pricing should be specifically addressed within the institutional context.

Lodging characteristics

In the lodging industry, pricing is more complex and critical due to the characteristics of lodging products—namely, high fixed and low variable costs, perishability, demand fluctuation, and demand segmentation. First, the lodging industry has high fixed and low variable costs. High fixed costs are related to the real estate and operational dimensions of running hotels, such as land, construction, license, insurance, administration fees, marketing, and utilities, due to the high cost of adding an incremental unit of capacity where the capacity of units is fixed (Weatherford & Bodily, 1992). Once the capacity is built, it takes a lot of time and money to add extra rooms to the property within the units; thus, increases in supply seldom happen in the short run.

Variable costs are defined as expenses needed for the day-to-day operations that vary in direct proportion to the level of business activity (Schmidgall, 2002). The lodging industry has relatively small variable costs for the unit of product and service, which includes casual labor, guest supplies, and travel agents' commission. Although fixed costs do not change in the short run, variable costs increase gradually as hotels engage in more business. Increased volume brings additional revenue at little variable cost (Steed & Gu, 2005). In addition, variable costs per unit decrease when purchasing larger quantities, meaning hotels benefit from the reduced variable costs per unit (Schmidgall, 2002). Thus, beyond the point where fixed and variable costs are covered, hotels have the flexibility to make adjustments in prices and take advantage of additional revenue at marginal costs (Sahay, 2007).

Second, lodging products are perishable. If rooms are unsold today, the capability of generating revenue drops to zero. Hotels cannot build their inventory of perishable products, so they cannot save today's unsold rooms for tomorrow's sale. As a night passes, hotels lose their revenue-generating capabilities for that night forever (Baker & Collier, 2003; Hanks et al., 2002). Therefore, hotels have the pressure of selling all available rooms, if possible.

Third, the lodging demand fluctuates and is related to time. Different factors, such as weather, holidays, or special events, cause a large number of people to travel during a certain period at a certain destination, thereby creating high and low demand seasons (Jang, 2004). Natural seasonality due to considerable variations in the climate and institutionalized seasonality due to holidays and other events at specific times of the year affect many business and leisure activities (Baron, 1975). In other words, tourist movements are affected by the seasonality of

demand and supply. For example, seasonality creates fluctuations in demand at ski resorts between winter and summer, in occupancy in a city center hotel on weekdays and weekends, and in demand for travel facilities during certain times of the day, on certain days of the month, and in certain months of the year (Kandampully, 2000). Demand fluctuates with time; thus, the time component is critical for hotel managers in pricing. In addition, the lodging business environment is unpredictable and uncertain, which results in changeable market demands (Phillips, 1999). Different factors, such as hurricanes, no shows, and last-minute cancellations, give rise to demand fluctuation.

Fourth, demand can be segmented. Lodging demand is commonly segmented by purpose of trip: business or leisure (Ghalia & Wang, 2000; Kashyap & Bojanic, 2000; Relihan, 1989). The two groups are distinguished based on lead time (i.e., time of purchase), price sensitivity, and flexibility with time. In general, business travelers tend to book late and are time-constrained, often bearing higher room rates. For leisure guests, products or services are sold well in advance as leisure guests plan vacations in advance. Because they plan ahead, leisure guests are flexible in deciding travel days. Given that travelers can be segmented into different groups, hotels attempt to implement different pricing strategies targeting different groups. However, it can be a challenge for hotels to project each demand as each group of customers has different price elasticity and profitability (Dutta et al., 2003).

These characteristics of lodging products limit management when dealing with the fluctuating demand. Whether demand is high or low, demand fluctuation creates challenges for management. If the lodging demand is higher than the hotel's capacity, the hotel loses its

opportunity to serve the customers because the lodging supply cannot be increased in the short run. Instead, hotel managers can raise prices to maintain the equilibrium between rooms and reservation bookings, accepting reservations only from those willing to pay higher rates.

Similarly, if demand is low, the hotel loses revenue from the unused resources because lodging products are perishable. The nature of perishability also prevents the lodging industry from building inventory for later usage. In such a situation, hotel managers have the option of lowering room rates to generate demand. By offering a discount, hotels might be able to attract those who would otherwise not stay in their hotels. Thus, pricing plays a critical role in the lodging industry as appropriate pricing not only maximizes revenue from the fixed capacity, but also induces customers to voluntarily alter their demand (Abbey, 1983; Schwartz, 1998).

Yield management

The emergence of yield management is a clear illustration of corporations attempting to gain more control in the price-setting process. In pricing, revenue management or yield management is considered an essential instrument by dividing customers into different segments based on their purchase intentions and allocating capacity to the different segments at the right time (El Haddad, Roper, & Jones, 2008; Jauncey et al., 1995; Kimes, 1989; Kimes & Wirtz, 2003). In order to maximize a firm's revenue, revenue management is used to form market segmentation criteria and overall pricing policy in the long term at the strategic level, establish target occupancies for different market segments at the operations level, and determine decisions about what price to offer and what reservations to accept in the short term at the operational level (Jones & Lockwood, 1998).

Through yield management technologies and tools, hotels receive information that they use to make strategic operational decisions. The way information is presented on the revenue management software interface significantly influences the decisions ultimately taken by managers (Schwartz & Cohen, 2004). Managers' decisions are influenced by the information, but at the same time the way the information is gathered, interpreted, and analyzed is influenced by managers. Despite revenue management that guides management to set a price, managers are the ones who constantly process the relevant information and make the final decisions.

Ownership and management structures

The lodging industry includes different ownership and management structures and different sizes; therefore, it involves different players in the operation of an individual hotel (Croes & Semrad, 2012; Piccoli, O'Connor, Capaccioli, & Alvarez, 2003). Because each hotel has its unique structure and is different in size, hotels do not have the same levels of information for making strategic, optimal decisions. For example, large corporate hotels receive extensive analytical reports while small and medium-sized independent hotels have to be pervasive and call around to their competitors and find out their occupancy and rate information via telephone (Kalnins, 2006). In fact, small and medium-sized as well as independent hotels have to overcome obstacles to make the best use of a variety of pricing structures (Luciani, 1999).

Due to different sizes and ownerships as well as differing management structures, it is difficult to infer that every hotel applies a similar degree of revenue management in its operations. However, every hotel has a system for taking reservations, setting room prices, and changing its prices in response to actual demand (Yeoman & Watson, 1997). Thus, this study

focuses on the process of changes in price at the operational level instead of using the terminology of yield management or revenue management.

The process of price change

Elasticity of demand

Based on economic theories, equilibrium exists when the supply equals the demand in a given market (Mankiw, 2004). Economic principles of supply and demand claim that, when prices fall, demand for a given product will rise. Price elasticity of demand reveals how much room demand changes in response to a change in price. Given the following formula, the demand for a room is said to be elastic if the elasticity of demand is greater than one. If demand is price elastic, a certain price cut brings greater demand. In contrast, the demand for a room is said to be inelastic if the elasticity of demand is less than one. If demand is price inelastic, a particular discount will bring little increase in demand. Changes in price have a small effect on demand.

$$Elasticity\ of\ demand = \frac{\%\ change\ in\ number\ of\ rooms\ sold}{\%\ change\ in\ price} \quad (1)$$

A few scholars argue that, in the hotel industry as a whole, there is little evidence that a change in room rates has any substantial direct effect on occupancy (Abbey, 1983). In his study on yield management approaches in hotel room pricing, Relihan (1989) mentioned that lodging demand nationwide is relatively price inelastic because it is finite. Both increases in room rates (Abbey, 1983) and decreases in room prices (Enz, Canina, & Lonnano, 2004, 2009) have little

effect on occupancy, suggesting that lodging demand is inelastic. This might hold true in the long run, but perhaps not in the short run.

Demand elasticity is not fixed; rather, it changes over time. Lodging demand is influenced by a number of factors, such as the target market, the intensity of competition, the local market, and customers' perceptions of the available substitutes (Abbey, 1983). Pertaining to a fixed product supply, managers must contend with external demand constraints within the market; thus, the lodging industry seems more concerned with the microeconomics of a firm's financial performance within a geographic location (Jeffrey, Barden, Buckley, & Hubbard, 2002). In conjunction with competition, even small differences in price can make a significant difference between winning and losing business on the local level (Relihan, 1989). Actions of local competitors in changing room prices, especially price markdowns, lead to significant changes in demand at the local level, especially as managers establish their market compared to the total market share within the same geographic location (Olsen, West, & Tse, 2008).

Demand in relation to lead time

Lead time refers to the number of days between reservation date and check-in date. The component of time is crucial in determining a price because time is closely related to demand fluctuation. Pricing is not just a static matter at a particular point in time, but the dynamic process of the cumulative intertemporal interactions from one threshold to another. Lodging demand elasticity varies over time, such as during particular seasons and even days of the week; thus, the knowledge of the demand elasticity in relation to time is critical. At the local level, lodging demand is elastic, especially just before an arrival because customers are coming to the

region and need a room to stay. For those customers driven by a room price, it becomes a matter of how much they can save by staying at a hotel over other alternative hotels.

Price decisions in the short run are more critical due to the elasticity of demand and the pressure of empty rooms, but analytical tools often fail to capture the dynamics of demand in the short run. For example, Ghalia and Wang (2000) illustrated a situation where one convention held at the hotel for several consecutive years moves to a different location in the following year. The computer system would still show high demand during the convention period, and the analytical revenue management system will not catch up with the new level of demand during the short-term horizon until actual bookings start to accumulate in the reservations systems. Some adjustments need to be made, but the computer system will not detect such changes. Another example is related to weather. Hotels expect to have nice weather over the weekend and reserve rooms for last-minute reservations. If a cold storm unexpectedly comes in that weekend, room rates need to be adjusted given the external factor in the short run. With the knowledge of a convention not taking place at the hotel this year and last-minute reservations not happening due to a cold storm, hotel managers adjust room rates to respond to the lower-than-expected actual demand.

Pricing decisions take into consideration human judgment in the lodging industry. The existing literature argues that the organizational culture determines the success or failure of the adoption and implementation of pricing strategies, thereby emphasizing the importance of training and support system (Kimes, 1989; Weatherford & Bodily, 1992). Along with the importance of developing an organizational culture, human resource management has been

recognized as an essential feature in pricing (Jones, 1999; Jones & Lockwood, 1992; Yeoman & Watson, 1997). If pricing is all about the computerized system and technological tools, organizational culture or human resource management should not be an issue when adopting and implementing pricing strategies. This implies that variation exists depending on how human agency in each institution makes pricing decisions during the daily operations and implementation of pricing techniques. The role management plays in influencing the pattern of shifting demand in relation to room rates should be addressed.

Managers monitor actual bookings and determine periods when to restrict the availability of rooms as well as other periods in which to sell rooms cheaply in order to maximize return (Lee-Ross & Johns, 1997). Changes in price and the allocation of room products in response to demand reflect management's ability to make an intelligent use of the fixed capacity. When demand is high, managers shift the price upward and attain rooms for those willing to pay higher rates. When demand is low, managers shift the price downward to stimulate demand and create the best cash flow possible in the short term.

Pricing approaches

Three approaches to pricing strategies have been recognized in the literature: market equilibrium, institutional history, and economic sociology (see Table 1; Phillips, 2012). The market equilibrium approach assumes that each player in the market pursues the maximization of profits or utility and applies neoclassical theory in which facts (i.e., hard data) favor rationalism and positivism. Although the majority of past theoretical approaches to pricing have been analytical, scholars recognize a gap between analytical theory and actual business (Lucas, 2003).

The price-setting process builds on the behavioral theory of the firm, which claims that prices can be set to balance competing interests rather than to maximize profits (Cyert & March, 1963; Dutta, Abaracki, & Bergen, 2003). The behavioral theory of the firm takes the price-setting process to be an organizational artifact (Cyert & March, 1963), as decisions are made within the institutional context of a firm's overall marketing plan (Foxall, 1980). Managers try to fit their management systems to the facts of the industry, such as the fixed-capacity nature of hotels from a contingency perspective (Brignall, 1997; Kotas, 1975; Mattimoe & Seal, 2011).

Institutional history emphasizes historical contingency—that is, the origin, development, and persistence of economic institutions are reinforced by human cognitions and habits embedded in specific institutions, thereby influencing how prices are actually formed in specific institutional contexts (Hodgson, 1998; Mattimoe, 2007; Mattimoe & Seal, 2011; Phillips, 2012; Phillips et al., 2004). For example, Mattimoe and Seal (2011) examined hotel room pricing that incorporates marketing and accounting standpoints from an institutional perspective. They illustrated that specific historical factors influence the extent and implementation of pricing decisions and that those decisions are subject to path dependency.

Although Mattimoe and Seal (2011) considered the marketing standpoint to be more subjective and the accounting standpoint to be more objective, human judgment plays a role in price decisions regardless of whether they are marketing or accounting related. Decisions in pricing include a time-dependent aspect because subjective human judgment is applied to the policy of pricing rather than the source of information.

Mattimoe and Seal's (2011) study is also limited to an independent, family-owned hotel and neglects to include other types of hotel structure or other influences that occur outside of an institution. Although the explanation comes from within the cases, cases should reflect a pattern or model of explanation that will provide some assurance of the validity of the observations and relationships (Ryan, Scapens, & Theobald, 1992; Scapens, 2006; Wilber & Harrison, 1978). The authors' observations are based on an individual case and can be adequate for providing explanations in theoretical generalization, but their work fails to prove a general systems framework that can be used in surveys or experiments that confirm emergent relationships.

On the other hand, according to economic sociology, price decisions are made around social activities (Phillips, 2012). The institutional environment approach is related to the need to embrace the rules, social norms, and expectations of others outside the organization (Scapens, 2006). Organizational actors, such as managers, construct their judgment and make decisions within society. Scapens (1994) argued that "economic facts do not speak for themselves" and supported economic activities in close rapport with organizational and social decision-making processes. Social constructivism emphasizes the role of communication as some facts can only be seen and accessed through the integration of logic, values, facts, and communication that reflect specific organizational and social discourses (Mattimoe & Seal, 2011; Phillips et al., 2004). For example, Craig (2009) illustrated how hotel pricing is influenced by social elements. When hotels see their competitors lowering rates, they feel pressured and drop rates in response, putting aside everything learned in pricing training. By taking the analytical, social, institutional, and human components of the pricing decision together, the pricing literature can close the gap

between analytical theory and actual business, thereby reflecting the complete picture of pricing practice.

Table 1 Pricing approaches

	Market equilibrium approach	Institutional history	Economic sociology
Assumption	Economic theory; maximizing profits vs. maximizing utility		Economic transaction as a particular type of social interaction and modes of economic interaction with a society, the institutions that are built around economic activities and the allowable sets of outcomes are strongly mediated by broader social factors
Key players	Buyers, sellers, intermediaries	History	Context
Theory	Game theory; contingency theory; neoclassical theory	Institutional theory; historical contingency; path dependence	Social embeddedness; social constructivism
Factors	Preferences, information available, distribution technology, characteristics of the product or service for sale, the regulatory environment	The origin, development, and persistence of economic institutions in terms of social change	Social surrounding context (institutional, technological, and regulatory changes)

In the lodging literature, the majority of pricing literature has been based on economic theories; these studies have identified attributes that influence customers' choice and examined hotel characteristics that influence pricing. Customers' choice of a selected hotel over alternative hotels is influenced by several factors. For example, in choosing accommodations, customers recognize price as one of the influencing factors along with location, service quality, reputation,

security, cleanliness, hotel size, brand name, restaurant availability, distance to city center, room features, parking, and sport facilities (Bull, 1994; Carvell & Herrin, 1990; Chu & Choi, 2000; Danziger, Israeli, & Bekerman, 2004; Espinet, Saez, Coenders, & Fluvià, 2003; Israeli, 2002; Thrane, 2005; Wu, 1999).

Other factors also affect a hotel's pricing, such as cost structure and local competition. If there are more fixed costs involved in the structure, more market orientation is required (Kotas, 1975). However, due to the high fixed cost nature of hotels, cost control seems to be a secondary consideration (Harris, 1992). Local competition in relation to pricing has received attention in some studies. For example, the number of hotels in the same category and the average geographical distance to these direct competitors in each location appear to have a strong effect on pricing (Becerra et al., 2012; Lee & Jang, 2012, 2013).

Discounting

The rational process of discounting might be hampered by the time inconsistency facing a manager. Time inconsistency occurs when a decision happens in the present, but the decision relies on the expected and projected demand for the future. Rational expectations theory plays a central role in the best guess of the optimal price (Muth, 1961; Semrad, 2010). In an economic situation, pricing depends partly upon what managers expect to happen in a market (Muth, 1961). In setting up prices, management decides the best use of the fixed capacity of rooms and makes the best guess of costs, demand, and market competition (Ghalia & Wang, 2000). The optimal price should match the projected demand. In an ideal world, hotels accurately expect demand for a particular arrival date, and hotels will be able to sell all rooms available at the

initially set rate. For example, hotel managers are aware that, due to seasonality, they expect a low demand during a slow season. They set initial room prices low based on projected demand, which is not considered to be at discounted rates. If the actual demand matches the expected demand, hotel managers do not need to make adjustments in price in order to draw more demand at the last minute.

However, in reality, hotel managers see the downward-sloping demand curve and have vacant rooms to fill (Croes & Semrad, 2012; Kalnins, 2006). Hotel managers frequently encounter the problem where actual demand is lower than the expected demand. In the lodging industry, the changeable market demands and competition create an unpredictable and uncertain business environment (Phillips, 1999). Factors such as weather, holidays, no shows, cancellations, and competitors lead to demand fluctuation and challenge hotel managers in forecasting an accurate demand and setting up the optimal price. For example, if a group cancels its reservations at the last minute, hotels suddenly have to deal with empty rooms.

The distance between the present and the future is worsened by the perishability of the production of hotel rooms. Lodging products are perishable, so the capability of generating revenue for rooms unsold today drops to zero. The revenue for rooms that remain unsold for that night will be gone forever. The perishable nature of lodging products leads management to feel pressured by this discrepancy.

When a discrepancy occurs between expectation and actual business, changes in price are often a quick fix (Kotler et al., 2008). Equilibrium will be achieved between actual demand and expectations through constant small adjustments in price. Managers are forced into a position

where they have to decide whether to discount or not. For example, in Mattimoe and Seal's (2011) study, a manager reported that he would offer a discount, reacting to a poor occupancy rate in the short run, in response to bad weather or the competition undercutting his property. Thus, room rates are not static, but change corresponding to the differential demand from market segments (Taylor & Enz, 2002).

As presented in Figure 4, the band between the smooth curves depicts the expected pattern of lodging demand in the market on a particular day (Relihan, 1989). The actual booking level is represented by the line between occupancy points (i.e., one for each day). When deviation occurs between actual bookings and the expected demand, the hotel management leaves out potential revenue that would have been earned by adjusting rates. In a similar manner, if an actual booking is beyond the threshold band, prices should be adjusted. For example, in this particular case, actual bookings close to arrival exceed threshold levels, highlighted in blue, suggesting that discounts can be eliminated to accept only higher rate-paying customers. In the middle of the graph, actual bookings fall below the threshold, highlighted in red; thus, it would be recommended for management to offer discounts to stimulate more demand.

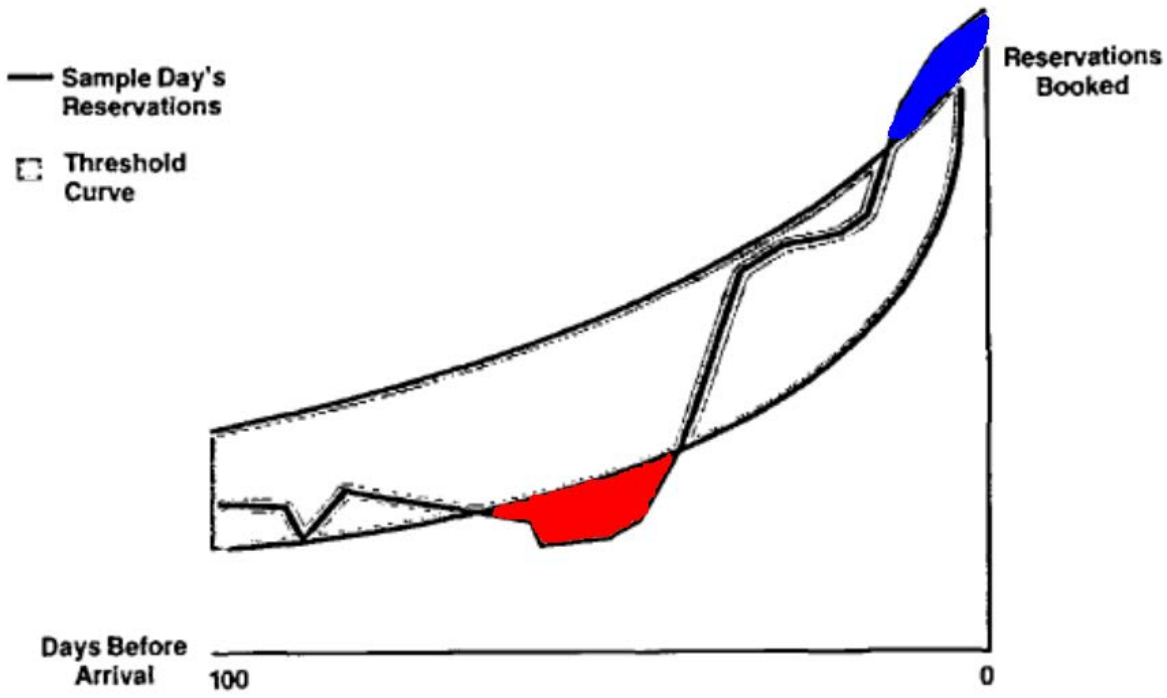


Figure 4 Sample threshold graph adopted from Relihan (1989)

Literature in discounting

Despite the importance and broad implications of discounting, the understanding of discounting as a pricing strategy is lacking in the hospitality literature. Several themes were identified during a review of the literature. First, very few studies have investigated the underlying concepts of discounting. For example, a search using EBSCO Hospitality and Tourism Complete delivered only 61 articles related to discounting in a hotel context as of April 26, 2013. The search was done using the key words "discount, price reduction, price promotion, or price cut" and "hotel or lodging." A careful review showed that only 16 articles were directly related to discounting in the lodging industry, as shown in Table 2.

Table 2. Discount literature in the lodging industry 2000-2013

Definition of discount	Approach	Theory	Method	Predictors	Outcome	Author
Discount$= Actual room rate charged/the premium rate to arrive to the percentage rate	Market equilibrium	Rational expectations theory	Error correction model	Lagged discounted rate	ProfitPAR	Croes & Semrad (2012)
Discount% = (ADRt− ADRt−1) /ADRt−1	Market equilibrium	Choice theory	Spatial econometric model	Segment, quality (ADR of the segment), number of rooms, number of competitors, distance from competitors (in miles)	Ln(ADR)	Lee & Jang (2013)
Discount%=a single room/the price of a double room	Market equilibrium	Theory of product differentiation	Ordinary least squares and structural equation modeling	Category (number of stars), chain, local competition (number of hotels in the same category, the average geographical distance to direct competitors)	Listed room price; discount	Becerra, Santaló, & Silva (2012)
Percentage off from ADR	Market segmentation		Anova; t-test	Consumer age, gender, income, and education	Involvement in discount seeking	Lee, Bai, & Murphy (2012)
ADR during shoulder season	Market equilibrium	Classic theory	Aspatial and Spatial Models	number of in-room amenities, number of on-site amenities, distance from city center (in miles), number of rooms, function space	ADR	Lee & Jang (2012)
Discount amount that a hotel has to offer for customers to switch from a preferred brand	Market segmentation		Factor analysis; t-test	Segment (Full-service; limited-service)	Switching discount	Tanford, Raab, & Kim (2012)
Percentage off from ADR	Market segmentation		Anova; Manova	Reward membership, commitment	Switching cost	Tanford, Raab, & Kim (2011)
Pattern of price change	Market segmentation	Neoclassical economic theory, reference theory	Logistic regression	Room rate change pattern	Propensity to book	ChihChien & Schwartz (2008)

Definition of discount	Approach	Theory	Method	Predictors	Outcome	Author
a short-term reduction of the listed price of a service	Market segmentation		Manova	Price discount frames, price discount levels	Quality, value, purchase intentions, willingness to spread WOM about the discount	Nusair, Yoon, Naipaul, & Parsa (2010)
% difference in ADR = (hotel's annual ADR- annual ADR of competitive set)/annual ADR of competitive set	Market equilibrium	Microeconomic theory	Descriptive	% difference in ADR	% difference of RevPAR	Enz, Canina, & Lomanno (2004; 2009)
Price reduction based on age	Market segmentation		Manova	Senior discount	Attitudes and behaviors of discount usage	Pennington-Gray, Beland, & Sklar (2002)
Equal to the marginal cost	Market equilibrium		Ellison's model; modeling	Opaque feature	Symmetric equilibrium	Shapiro & Shi (2008)
Price reduction based on time	Market segmentation	Rational expectations theory		last-minute sales to consumers vs. through an opaque intermediary	Expected profit	Jerath, Netessine, & Veeraraghavan (2010)
Price reduction based on lead time	Market equilibrium		Room allocation model; modeling	Early discount, cancellations, overbooking	Room allocation	Koide & Ishii (2005)
Discount$=current rate × (1 – discount percent)	Market equilibrium		Modeling	Hotel's capacity, number of rooms sold to the group; demand for rooms at the regular rate; Regular rate	Group discount rate	Schwartz & Cohen (2003)

Note: a search in EBSCO Hospitality and Tourism Complete may not capture all studies on the subject.

Second, there is no commonly agreed upon meaning and measurement of discounting. For example, discounting was defined as a dollar value less than the published room rate for a specific period by Croes, Semrad, and Yost (2010) and Croes and Semrad (2012). In discussing price competition among hotels, Lee and Jang (2013) calculated the average discount as a percentage by dividing the room rates of the quarter subtracted from room rates of the previous quarter by the room rates of the previous quarter. To claim that hotel discounting can have a negative effect on revenue as discounting decreases the revenue from each room sale, Enz et al. (2004, 2009) calculated the percentage difference in the room rate by the hotel's annual room rate, less the annual room rate of the competitive set, divided by the annual room rate of the competitive set. Other discounting literature simply describes discounting as a price reduction based on time of purchase (Jerath, Netessine, & Veeraraghavan, 2010; Koide & Ishii, 2005; Lee & Jang, 2012) and age (Pennington-Gray, Beland, & Sklar, 2002). Although scholars develop their own ways of defining and calculating discounts, this lack of common language and clarity leads to confusion in conceptualizing and determining the implications of discounting.

Third, studies that engage in assessing discounting are limited to two approaches: market segmentation and market equilibrium. From a market segmentation approach, discounts can be used to segment groups based on price sensitivity. For example, customers travelling for leisure purposes (Ghalia & Wang, 2000; Kashyap & Bojanic, 2000; Relihan, 1989), females and less educated customers (Lee, Bai, & Murphy, 2012), and customers in limited service hotels (Tanford, Raab, & Kim, 2012) tend to seek discounts. These studies suggest that discounts should be offered exclusively to such customers. From a market equilibrium perspective, where neoclassical economic theories are often applied, the studies mainly focus on either the impact of

discounting (Enz et al., 2004, 2009; Croes & Semrad, 2012) or the drivers for discounting (Koide & Ishii, 2005; Lee & Jang, 2012, 2013; Schwartz & Cohen, 2003; Shapiro & Shi, 2008).

Market equilibrium and market segmentation are derived from rational models and positivist approaches, and sophisticated statistical techniques and the development of technology enable researchers to conduct studies using such tools (Slovic, 2001). However, positivist research is limited to observable and measurable factors. Even if positivist researchers believe that unobservable or immeasurable factors are necessary for making predictions and explanation, they tend not to be included in empirical tests (Friedman, 1953; Treviño & Weaver, 2003). Managerial decision making often falls short of the purely rational model (Daft & Marcic, 2008; Haley & Stumpf, 1989). Rational models are static and insensitive to restrained factors, yet "it is difficult to explain variance in something that is absent" (Treviño & Weaver, 2003).

Fourth, with regard to the consequences of discounting, the concept of discounting as a pricing strategy is contentious in the hospitality literature. A stream of research supports that hotels are better off keeping their room rates high because lodging demand is inelastic; therefore, discounted room rates generate little volume and revenue. Using a six-year trend of average room rates and occupancy rates for 325 transient hotels, Abbey (1983) observed that room rates increased, but occupancy rates remained relatively stable, providing support for the claim that raising room rates has little effect on occupancy. Based on global data, Enz et al. (2004, 2009) also claimed that an increased demand due to discounting does not compensate for the amount of reduced room rates. When hotels drop room rates relative to the competitive set, they, in fact, fill a hotel, but generate less revenue than their direct competitors who maintain their rates at levels

comparable to their competition. In other words, guests do not purchase enough rooms at the lower price to make up for the revenue lost through the discount.

Another stream of research claims that discounting leads to a better financial performance in the short run. Croes and Semrad (2012) criticized past pricing studies that rely solely on the average daily room rate (ADR) and RevPar (ADR x occupancy rate) to measure financial performance. Abbey (1983) and Enz et al. (2004, 2009) assumed the statistical properties of a stationary and deterministic system, in which statistical properties such as mean, variance, and correlations are all constant over time; however, they failed to provide an empirical validation verifying that such assumptions were correct. Considering the frequency of the time series in conjunction with the time period, Croes and Semrad (2012) confirmed the presence of non-stationary tendencies, in which managers cannot simply assume that the statistical properties would be the same in the future as they have been in the past. In other words, a room rate holds memories: Today's room rate is not independent from yesterday's rate. After considering these non-stationary tendencies, they concluded that the incremental use of discounting room rates works to correct for temporal periods of decreased demand, thereby increasing the financial performance in the short term (Croes & Semrad, 2012).

In summary, the existing discounting literature lacks volume and consensus and does not account for activities beyond neoclassical price theory. The concepts of economic rationality, costs and markets, and the key actors reflect price decisions, and institutions' key actors provide a cognitive framework for interpreting sense data and intellectual routines for transforming information into useful knowledge (Hodgson, 1998). Analytical theories are not sufficient to

reflect the real picture of business practices. Thus, the lodging industry needs a better understanding of the discounting decision-making process beyond rationalism to discern commonly agreed upon features that can be utilized by both academics and practitioners. In order to provide a broader picture drawn from the management perspective, the process of a price decision serves as a unit of analysis and reflects the assessment of information integrated within the institutional and sociological context.

Process

The desire to obtain an understanding of the process has attracted attention from scholars seeking an adequate explanation for phenomena (Child, 1972; Dean & Sharfman, 1996; Hitt & Tyler, 1991). Process theory comprises the steps staged in a progressive course, and the process is described as a dynamic and interrelated unity of decision stages (Zeleny, 1982). Glaser (1978, p. ##) also defined the concept of process as "a way of grouping together two sequential parts of a phenomenon," emphasizing steps that occur directionally to a phenomenon over time. According to Glaser (1978), basic social processes have three properties: stages, variability, and pervasiveness. Processes have stages where each breakpoint shows variations in the pattern of behavior, and each point identified accounts for these variations. The length of time for each stage depends on the function of conditions that create the changes leading to the next stage, so each entity has its own pace and goes through the process in a different manner. Patterned and systematic uniformity flows of social life occur over time, and social processes are pervasive.

A few studies focus on the process of pricing in the lodging literature. Yeoman and Watson (1997) considered people elements as the cornerstone of successful pricing practices

(e.g., yield management). Depending on management, the process of pricing that defines how, when, where, why, who, and what decisions are taken varies. These authors claimed that management should be responsible for acknowledging demands, constraints, and choices as well as understanding the nature and complexity of the boundaries involved in a price decision. Jones (1999) attempted to develop a systems model based on interviews with key managerial staffs responsible for reservations, observation of meetings, and front-office activity and on a review of the relevant documentation. Using case studies, Jones (1999) grounded his study in systems theory, which involves the depiction of a model of a real system in order to identify the internal and external factors influencing the system.

Given these definitions, this study defines processes as sequences of events, stages or cycles of decisions, and choices made by an entity. Processes narrate emergent actions and activities by which individual or collective endeavors occur in the field. They describe the general sequence by identifying disequilibrium, assessing information, and making discounting decisions to respond to market equilibrium as well as social, institutional, and managerial related influences.

Rational judgment in decision-making

Past decision-making studies have relied heavily on rational models that assume that management uses rational judgment in accessing all information, analyzes and interprets this information in an objective and logical way, and chooses the optimal choice to maximize objectives (Arnold, 1973; Drury, 2006; Robbins, 1988). Rational models have gained in popularity due to the availability of sophisticated mathematical and statistical techniques and the

development of technology by which to implement them (Slovic, 2001). Although these models have been criticized as being too static and insensitive to restrained factors, the rational and scientific approach is consistently applied to a set of decisions and is theoretically derived and empirically determined (Bauman, 1967). Rational models quantify relationships between market factors and performance, and rational systems of information processing enable individuals to approach a problem systematically and deliberately while engaging in analyses in an attentive manner (Bargh & Chartrand, 1999; Epstein, 1994, 2002; Kahneman, 2003; Stanovich & West, 2000).

In the lodging industry, the implementation of yield management is a good illustration of the rational approach that takes place through the application of sophisticated technologies and analytic tools as management attempts to gain more control in the price-setting process. However, a rational approach of yield management underestimates the subjective element in the price-setting process and fails to consider the human judgmental approach (Ivanov & Zhechev, 2012). Human judgment matters in the price-setting process because managers not only influence the way in which information is presented in the revenue management software, but also are the ones who make the final decisions (Croes et al., 2009; Schwartz & Cohen, 2004).

Bounded rational judgment in decision-making

Human behavior in the business environment intends to be rational, compatible with accessibility to information and computational capacity; however, in the real world, human beings are bounded by nature (Simon, 1955; Kahneman, 2003). Scholars have recognized that managerial decision making often falls short of the purely rational model (Daft & Marcic, 2008;

Haley & Stumpf, 1989). Management encounters several challenges when implying rational and analytic judgment in decision-making efforts. High costs are involved in obtaining all information (Simon, 1979), and management is limited in time and cognitive ability to access all information (Abelson & Levi, 1985). Due to limited information-processing capabilities, management is not in a position to consider all possible alternatives and select the optimal choice. Instead, management searches for a satisfactory solution, which is called bounded rationality (Simon, 1955). In the logical consequence of bounded rationality, decision makers constrained with their limited information-processing capacity make "good enough" choices rather than optimal choices (Simon, 1967).

The scope of processing information is constrained to the familiar alternatives available to management as they attempt to make a decision when faced with all of the organization's problems (Cyert & March, 1963). March and Simon (1958) claimed that, because human beings are limited in their ability to make completely rational decisions, organizational structures and processes evolve to prevent uncertainty from overwhelming limited capacities. For example, when problem solving, management within a firm follows the same pattern of decisions in response to a similar problem. Encountered with new problems, the search for solutions does not extend much beyond already known solutions due to the limits of human information-processing capabilities (Cohen, March, & Olsen, 1972). Limited search activities become routines, and processing information in a similar problem does not require much time and effort to make a decision over time. For example, activities in the organization develop into routines and, over time, come to be taken for granted (Burns & Scapens, 2000; Scapen, 2006). If managers lower room rates in response to competitors' price drop, over time discounting simply becomes the

way things are done in that institution. Thus, the pattern exists in the process of pricing and identifying the pattern of the process, and inclusion of the organizational structure and process in pricing will strengthen the understanding of the discount decision-making process.

Information processing

The proper use of information is seen as a key element in decision making (Hofer & Schendel, 1978; Porter, 1980; Slovic, 2001) as managers engage in information search activities to reduce or eliminate uncertainty and make strategic decisions based from the information search activities (March & Simon, 1958; Olsen et al., 2008). The decision process involves the collection of information relevant to the decision and the reliance upon analysis of this information in making decisions (Dean & Sharfman, 1993). Quality of information denotes the usefulness of the available information in aiding a decision maker to evaluate his or her true utility associated with an alternative (Keller & Staelin, 1987). Managers attempt to select relevant information by determining how much time, effort, and money to expend in order to obtain such information (Lee, 1971). Yet there is generally a lack of clarity in relation to the credibility of information explaining which force is driving a change, no matter what source the manager relies on (Olsen et al., 2008).

Quality of information enhances a manager's ability to make better decisions, but quantity of information does not promise quality of information or decision effectiveness. In empirical marketing literature, increases in the amount of information provided have shown little or no influence on choice accuracy (Keller & Staelin, 1987; Oskamp, 1962; Russo, 1974; Slovic, 2001; Staelin & Payne, 1976). The effects of increasing the amount of information include

increasing the variability of the responses and decreasing the quality of choices (Slovic & Lichtenstein, 1971). In Keller and Staelin's (1987) study, decision effectiveness increased as the quality level of the information provided increased. At the same time, more information increased the cognitive costs associated with processing this information, resulting in a poorer decision. In other words, increasing the volume of information can lead to poorer decisions because human beings are cognitively limited (Kelly & Fiske 1951; Miller 1956; Simon, 1969; Streufert & Driver 1965). For example, Farhoomand and Drury (2002) demonstrated how workers experience the effects of information overload. The majority (72%) complained about the loss of time in assessing too much information, and one manager said, "Information overload causes delays, mistakes, and nonperformance. Eventually it erodes the quality of work. My efficiency is decreased, and I find it hard to prioritize my tasks" (p. ##).

Information processing often leaves managers facing too much information to be able to comprehend it all (Olsen et al., 2008). Managers are confronted with the fact that they should not only stay on top of information in the field, but also effectively translate it into useful information. After learning what information they can get and where to get it, managers face the harder challenge of "what use to make of it" (Graham, Dodd, Cottle & Tatham, 1962, p. ##). Human beings tend to simplify the decision process by relying on some information more heavily (Child, 1972; Duhaime & Schwenk, 1985; March & Simon, 1958; Weick, 1969). The development of rules, programs, and other repertoires of action serves to break down complex problems into more manageable units for human decision makers (Hitt & Tyler, 1991). Thus, management selects that information most relevant to the organization, interprets it, and responds

to it in order to establish and maintain a market to their advantage (Keats & Hitt, 1988) or to mitigate potential damages (Miles & Snow, 2003).

Management has indicated a difference in preferred procedures and values in decision making (Payne, Bettman, Coupey, & Johnson, 1992; Shafer, 1987). The great variance occurs as decision making reflects management's capability of gathering and processing the information. Through the decision-making processes, managers accurately anticipate factors within the environment influencing businesses and make choices after taking these factors into account, thereby resulting in better performance compared to those managers who do not do so (Dean & Sharfman, 1996). The extent of information reviewing, the range of individuals consulted, and the formality of information processing vary among individuals (Olsen et al., 2008). Given the great variance in information processing among managers and firms, the ability to change prices depends on processes the managers have in place (Dutta et al., 2003).

Human judgment

Information requires an understanding and interpretation of the situation to which it pertains and, thus, necessitates the use of human judgment (Khatri & Ng, 2000). Human judgment plays an important role as human beings identify and measure the relevant information and take into account the influencing factors not included in the historical data (Blattberg & Hoch, 1990; Ghalia & Wang, 2000; Makridakis & Wheelwright, 1979). Human judgment is capable of knowing about specific elements that a series of historic data might not predict in the business environment (Ghalia & Wang, 2000; Makridakis & Wheelwright, 1979; Phillips, 1999). Human beings are able to not only evaluate information that is difficult to measure and quantify,

but also capitalize on new information and changing conditions in a dynamic decision-making environment (Blattberg & Hoch, 1990; Meehl, 1954).

Rational models are built based on historical data that might not predict a discontinuous or sudden change in the business environment (Dutta et al., 2003; Ghalia & Wang, 1999; Jones, 1999; Phillips, 1999). For example, in a forecasting simulation study, Rajopadhye and his colleagues (1999) showed that their algorithm did not perform satisfactorily for certain occasions, although good forecasts were obtained from some days. They reasoned that the forecast based exclusively on a quantitative model and the hard data does not take into account external or nonrandom effects that might have influenced the demand. Several scholars, such as Jenkins (1980) and Croes and Semrad (2012), showed caution when using models that assume the statistical behavior of the future will be similar to the statistical behavior of the past. If some future events are likely to be untypical of past performance, then some scope is needed for making adjustments to the forecasts obtained from the model. For example, the economic recession in 2009 was an uncertain environment for hoteliers. During this period, hotel managers were in a guessing game because they could not rely on existing analytical tools and forecasts (Kimes, 2010). In such a situation, hotel managers make their best guesses based on the information available and the actions of others.

Nevertheless, human judgment is criticized because human beings are subject to biases, are constrained in their search efforts, and are inconsistent in judgment (Blattberg & Hoch, 1990; Cyert &March, 1963; Kahneman & Tversky 1972, 1973; Slovic, 2001; Whitecotton, Sanders, & Norris, 1998). Human beings tend to be overconfident and influenced by forces such as social

pressure and politics, leading to inconsistent decisions; so how human judgment should be played and to what extent are controversial issues (Beach, Christensen-Szalanski, & Barnes, 1987). For example, Chapman and Chapman (1969) labeled human judgment as an illusory correlation and described how prior expectations of relationships can lead to faulty observation and inference. Kleinmuntz (1990) even argued that pure rational models result in good performance whereas the addition of human judgment degrades the performance.

However, in discussing evidence stemming from poor performance of human judgment, Beach and his colleagues (1987) argued that a careful interpretation is needed because many studies rely upon a narrow range of conditions that are purposely designed to highlight fallibility in human judgment. In their study, Beach et al. (1987) found that poor performance due to poor human judgment results are cited an average of six times more often than studies resulting in a good performance of human judgment. As studies reporting good performance have been virtually ignored, an undue negative influence upon people's views about the quality of judgment and reasoning occurs, called the citation bias (Christensen-Szalanski & Beach, 1984).

Other studies have supported a combination of the rational approach and the subjective human judgment approach, claiming that this combination can result in better decisions than either method in isolation (Blattberg & Hoch, 1990; Ghalia & Wang, 2000; Hoch & Schkad, 1996; McClish & Powell, 1989; Whitecotton et al., 1998; Yaniv & Hogarth, 1993). For example, Blattberg and Hoch (1990) demonstrated in two business forecasting settings that a combination of human judgment and rational prediction results in more accurate predictions than either method alone. Especially in dynamic decision environments, where a knowledgeable decision

maker is able to capitalize on information not captured by the scientific model, a combination of rational and human judgmental approaches work better. Hoch and Schkade (1996) examined the effectiveness of using rational and intuitive decision support systems in high and low environmentally predictable situations and concluded that providing decision makers with both decision support tools was best, particularly in low predictable environments.

This study does not argue that human judgment yields superior choices than rational and systematic judgment. Rather, this study acknowledges that a theory of strategic decision making has to take into account both rational and human judgments (Khatri & Ng, 2000; Pondy, 1983; Simon, 1987). Given the previous inconsistent results of human judgment performance, we can infer that human judgment works in some cases, but not in others. A rational approach supplements rather than replaces subjective judgment processes (Whitecotton et al., 1998), and the focus should be under what conditions human judgment performs well in conjunction with the rational models.

Managerial process in decision-making

The decision-making process involves human perception and evaluation, and managerial decisions are shaped by managers' needs, values, experiences, expectations, and cognitions (Child, 1972; Hitt & Tyler, 1991). No matter how effective an information system is structured, decision makers must harness information provided and interpret it before responding (Smith, Grimm, Gannon, & Chen, 1991). The success of strategic decisions depends on choices that managers make as management selects, interprets, and responds to information (Dean & Sharfman, 1996; Hitt & Tyler, 1991). Managers attempt to make meaningful decisions, and

managerial information processing incorporates the analysis and transfers the external elements from the boundary points of an organization to managers (Smith et al., 1991).

Managers have a substantial degree of control over strategic choices (Child, 1972; Miles, 1982); thus, the fortunes of the organizations depend on key decisions that management makes throughout the processes (Dean & Sharfman, 1996). Management is responsible for selecting and interpreting the environment, responding to those elements that are fixed, and trying to shape the remaining elements to their advantage (Keats & Hitt, 1988), and some managers will make better decisions than others in similar circumstances (Bourgeois, 1984).

In a similar manner, the price decision-making process requires a detailed understanding of the needs and expectations of each market demand. Management lacks the knowledge required to set prices in an economically rational fashion, taking into consideration accurate details of costs, demand, and market competition (Foxall, 1980). Instead dynamic processes are sensitive to the way managers form expectations through the actual course of events (Muth, 1961). The identification of a problem (e.g., the discrepancy between expected demand and actual booking), the processing of relevant information, and the implementation of an appropriate pricing strategy are dependent on the skills, expertise, and knowledge of the manager responsible for this aspect of the function (Yeoman & Watson, 1997). Thus, it is important to understand what kinds of information managers use and how managers put that information together to frame an estimate of future conditions.

Human judgment takes into consideration discontinuous or sudden changes in the business environment that are not included in the historical data (Blattberg & Hoch, 1990; Ghalia

& Wang, 2000; Makridakis & Wheelwright, 1979). Ghalia and Wang (2000) recognized human judgment as being instrumental in reducing the uncertainties when forecasting room demand. Managers have some knowledge about not only what elements can affect room demand for their hotels, but also when, how, and to what extent such an effect occurs during the different seasons. For example, forecasting tools cannot accurately estimate room demand for a period that coincides with the opening of a new competitor. Especially in the absence of the implementation of systematic and analytic tools, hotel managers monitor trends in room bookings and decide room allocation as a total judgment call made by the general manager (Littlejohn & Peng, 2007; Mattimoe & Seal, 2011).

In summary, information requires an understanding and interpretation of the situation to which it pertains, thereby necessitating the use of human judgment (Khatri & Ng, 2000). According to Miles and Snow (2003), it is the role of management to view the organization as a collection of people, structures, and processes that must be effectively aligned with the organization's chosen environment. Thus, it is critical for management to comprehend the social surroundings such as the competition and institutional culture, including the firm's ownership structure and size.

External factors

Predictability of the environment: Time

Firms encounter the constraints imposed on them by the nature of their relationship with the environment (Sadler & Barry, 1970). The influence of the external environment on decision making has been recognized (Bourgeois & Eisenhardt, 1988; Harrison & Pelletier, 1998).

Uncertainty within the environment results from a wide range of activities emanating from the actions of competitors, suppliers, customers, and regulators, and the degree and rate of change occurring in the environment reflect the level of uncertainty within the environment (Olsen et al., 2008). External factors occur outside the control of management yet influence the success of strategic decisions (Hitt & Tyler, 1991; Miles & Snow, 2003; Pfeffer & Salancik, 1978). Such factors can either help or hurt the performance of an organization, thereby resulting in managers continuously taking account of the influence of the external environment in making strategic decisions. Thus, managers must successfully identify the key external forces driving changes within the contextual environment of the organization (Harrison & Pelletier, 1998; Olsen et al., 2008).

A pattern of interrelationships exists between the organization and the forces that drive changes within the environment. Burgelman (1991) claimed that decision-making processes under differing environmental conditions need to be addressed separately. The uncertainty can be viewed on a continuum ranging from stable to very unstable (Dean & Sharfman, 1996; Olsen et al., 2008). In a stable environment, management has time to predict the future. Changes are continuous, and conditions are well understood and can easily be factored into decisions, thereby enabling managers to anticipate with some certainty and plan for change based on experience and past information.

However, the rate of change in the environment can be extreme when a change is rapid and discontinuous in terms of demand, competitors, technology, and/or regulation (Bourgeois & Eisenhardt, 1988). Effective decision making can be challenging in this rapid, unstable

environment not only because a change is so dramatic, but also because it is difficult to predict the significance of a change as it is occurring (Sutton, Eisenhardt, & Jucker, 1986). In an unstable environment, decision making is time constrained and requires management to make a decision relatively fast. In rapidly changing environments, management lacks the time to process information, which forces it to make a decision with limited information. For example, Bourgeois and Eisenhardt (1988) traced a decision from four executives using interview questions and developed propositions based on decision "stories" on a timeline, beginning with decision initiation. They found that, in rapidly changing environments, effective firms make strategic decisions quickly: the shorter the time frame in which strategic decisions are made, the better the firm's performance. In order to make a quick decision, it is inferred that management collects less information, but focuses on key information attributes.

Economic sociology: Neighboring competitors

Firms establish competitive sets and monitor the competitive pace within the environment (Olsen et al., 2008). In the lodging industry, competitors can be defined as the major firms leading the industry with national or international chains. In the immediate radius of a local hotel, the leading hotels within that radius become their main competitors (Olsen et al., 2008). Firms examine competitors' actions, such as where the competitors are directing their resources; this information gives managers a clear view of what the competitive landscape will look like in the future (Kotler et al., 2008). Firms seize opportunities and reap increased profits as they occupy a monopolistic position (Nelson & Winter, 1982). However, a monopolistic position holds true only until the firm's strategies are imitated by their competitors. Once a firm's action generates above-normal economic profits, competitors will respond and want to

participate in the profits; thus, a monopolistic position is never maintained in the long run (Smith et al., 1991).

Firms are not independent, but rather are affected by the actions of other firms, which thus compels firms to respond to their competitors' actions (Smith et al., 1991). Managers are aware that they need to evaluate the intentions behind and potential consequences of each competitor's action (Barney, 1986; Nelson & Winter, 1982). However, managers tend to follow a group norm; even if no one believes in a group norm, they abide by it out of fear (Akerlof & Kranton, 2005). The social influence literature describes this phenomenon as conformity, which refers to the act of changing one's behavior to match the responses of others (Cialdini & Goldstein, 2004). The dominant response of individuals in this situation is to conform to the audience's position (Lerner & Tetlock 1999; Pennington & Schlenker, 1999) because people have a desire to gain the approval of people in their social environment (Quinn & Schlenker, 2002).

Social comparison theory supports the idea of pressure from the social environment—namely, in the absence of objective reality checks, a person will use others as points of reference (Festinger, 1954). In order to describe managers who seek the social norm by mimicking the actions of competitors, certain conditions should be met. Social comparison theory applies to a condition where the environment is unstable and time constrained, and managers have difficulties gathering quality information in a timely manner.

Unexpected changes in competitor strategies will always affect practical pricing problems. Hotels are uncertain when their competition starts moving around room rates (Abbey,

1983). If faced with lagging demand, the industry leaders drop their room rates to sustain their market share; other hotels subsequently follow the actions of the industry leaders. Thus, lodging organizations simultaneously engage in searching for information to reduce or eliminate costs associated with an uncertain lodging demand. Craig (2009) demonstrated that hotels drop rates when their competitors lower rates. When a competitor lowers rates even further, the hotels get indignant and panic, dropping their rates even further, thereby disregarding everything learned in pricing training. By dropping a room rate, hotels occupy a monopolistic position until their competitors drop their rates in response. The excess profits hotels achieve through discounting motivate other hotels that then experience losses and lose opportunities to drop room rates. This situation can lead to a price war. Given such a context, an individual hotel's actions are affected by the actions of other hotels, and the actions of other hotels then influence an action of an individual hotel.

Institutional factors

Ownership structure

The lodging industry consists of several ownership structures and forms, which limit the implementation of effective pricing. Examples of ownership structure include franchises, management companies, and independent owners (Croes & Semrad, 2012; Piccoli et al., 2003). In franchises, the owner holds title to the assets, is responsible for mortgage payments, and provides the capital for the operations whereas the branded or chained hotels brand the property and follow a brand's standards, distribution services, marketing, technology, and other services. Similarly, a management company provides management talent and operates the property on a

day-to-day basis. However, the parties have partially misaligned interests and objectives, which often result in conflicts, rivalries, and differences of opinions.

As each ownership structure pursues its own logic and rationality, it is hard to establish a single decision-making process throughout industry. Each ownership structure has different objectives that have a major influence on pricing (Kotler et al., 2008). Every pricing effort starts with pricing objectives, and these objectives constitute the basis on which pricing methods and policies are formulated (Avlonitis & Indounas, 2005; Tzokas, Hart, Argouslidis, & Saren, 2000). The contextual characteristics affect the process as firms use pricing objectives as a standard for determining "what is expected and how the efficiency of operations is to be measured" (Tzokas et al., 2000). A different ownership structure lacks consensus around pricing objectives as each hotel attempts to achieve its own goal. For example, a manager at an independent hotel attempts to maximize cash flow by filling up rooms whereas a manager at a branded hotel is intent on maximizing sales revenue in favor of prices that enhance the company's brand image.

Franchise or chain-branded hotels stimulate consumer awareness and a sense of loyalty toward the product (Cunill, 2006). Operations at franchise or chain-branded hotels use a shared name and know-how as well as a common layout, design, and presentation of the premises while receiving ongoing technical and commercial support. In order to maintain the chain's global public image and the value of the brand name, contracts have several responsibilities, such as compliance with the chain's high quality controls for the hotel product and participation in compulsory marketing programs. In other words, brand-affiliated hotels have less freedom to make changes in price because they receive recommended rates for specific periods from the

corporate office. Although hotels can override these rates, hotel managers tend to stick to the standards and rules because noncompliance with the hotel chain's policy could endanger the continuation of the brand or franchise contract.

Although chain-branded hotels still command an overwhelming market share, independent hotels have gained significant ground through their use of global distribution systems and internet exposure (Swig, 2000). Independent hotels do not affiliate with any brands or chains, so they have freedom and flexibility when making discounting decisions. The success of independent hotels depends on their ability to be more introspective with regard to their customers; thus, independent hotels tend to adjust prices in response to customer demand. In addition, independent hotels have less access to the volume of information as they do not have a corporate office that provides all the information available.

Firm size

Previous studies have recognized the size of a firm as a key contextual variable (Bruns & Waterhouse, 1975; Child, 1972; Khandwalla, 1972; Lawrence & Lorsch, 1967; Merchant, 1981, 1984; Pugh, Hickson, & Hinnings, 1969). Their main claim rests on the positive relationship between the size of a firm and difficulties associated with social control, communication, and coordination. As firm size increases, it becomes more difficult to communicate and coordinate. Larger firms tend to include more participants in the discussion, so they formalize the decision-making process because it is difficult to control the activities through informal mechanisms (Bruns & Waterhouse, 1975; Merchant, 1981). Larger firms need to cope administratively with a large number of organizational members and their activities, imposing constraints upon certain

structural choices (Child, 1972). Whereas larger organizations formalize processes such as weekly meetings and conference calls, smaller firms can effectively control their activities through informal processes such as direct supervision and oral communication.

In the pricing context, top management in smaller companies often sets the price rather than the marketing or sales department. In larger companies, the corporate department or regional or unit managers typically handle pricing based on the guidelines established by the corporate management (Kotler et al., 2008). Lee-Ross and Johns (1997) compared the implementation of yield management, a procedure that attempts to maximize profits by using information about buying behavior and sales to formulate pricing, between large hotel corporations and small to medium-sized hotels. Objectives and culture vary based on the size. For example, large hotel corporations are geared toward profit maximization as shareholders demand an emphasis on investment value and require healthy dividends. In contrast, the majority of small to medium hotels is not publically traded and, thus, is concerned with other objectives, such as survival. Therefore, smaller firms tend to focus more on cash flow and, thus, make discount decisions in order to stimulate demand.

Human agency

Procedural intuition

There is a growing realization that effective decision support systems must incorporate intuitive aspects of decision making (Quah, Tan, The, & Srinivasan, 1994; Quinn, 1980). Decision makers can benefit from intuitive judgment learned from previous experiences associated with that situation (Quinn, 1980). Although intuitive judgment is often seen as

mystical, magical, paranormal, or irrational, many scholars claim that intuitive judgment is a sophisticated form of reasoning based on experience and learning (Agor, 1990; Harung, 1993; Isenberg, 1984; Khatri & Ng, 2000; Prietula & Simon, 1989; Seebo, 1993; Simon, 1987).

Intuitive judgment "consists of the mass of facts, patterns, concepts, techniques, abstractions, and generally what we call formal knowledge or beliefs, which are impressed on our minds" (Barnard, 1938). It occurs quickly as the automatic learned behavior sequences allow a decision maker to know almost instantly what the best course of action is (Khatri & Ng, 2000; Seebo, 1993). In particular, intuitive human judgment overcomes the limits of rationality, especially in an unstable environment when decisions are made under time pressure (Prietula & Simon, 1989).

Education & experience

Intuitive judgment neither comes easily (Khatri & Ng, 2000) nor occurs in an unprepared mind (Hodgkinson et al., 2009). Instead, intuition plays a critical role in expert decision making because decision makers benefit from the use of intuition as their implicit and intuitive knowledge adds advantages in making a decision beyond what explicit and rational judgment can account for (Plessner & Czenna, 2008; Salas, Rosen, & DiazGranados, 2010).

The education and experience levels of management can critically influence information search activities and, thus, decision making (Hambrick & Mason, 1984). In particular, Schultz (1975) argued that the ability to deal with disequilibrium induced by economic shocks is largely a function of education, with better educated individuals adjusting more successfully than less educated agents. The appropriate adjustment to shocks requires the collection and processing of

new information, and better educated individuals would be expected, on average, to excel at such tasks (Barrett, Sherlund, & Adesina, 2006).

Managers with high levels of knowledge specific to a given domain have acquired that knowledge through work experience (Chase & Simon, 1973; de Groot, 1978; Ericsson, Krampe, & Tesch-Romer, 1993; Salas et al., 2010). Extensive experience applied to a specific field can produce automatic responses and a large and well-organized knowledge base, affording intuitive pattern recognition capacities (Dane & Pratt, 2007; Klein, 2003). Experienced and educated managers use a collection of complex patterns in the field to perceive larger and more meaningful patterns in the environment more rapidly than those who are without such experience (Gobet & Simon, 1996; Neisser, 1976; Simon & Chase, 1973). Whereas less experienced managers tend to go more by the principles learned from books during their education (Harung, 1993), an expert learns to ignore the irrelevant pieces of information and concentrate on the critical ones (Harung, 1993; Prietula & Simon, 1989).

Experts with experience and education have acquired specialized knowledge through work experience, thereby achieving high levels of performance (Ericsson et al., 1993). Novices intuitively seek experienced practitioners because it might be sufficient to mimic every possible aspect of past successes. Managers' implicit and intuitive knowledge adds advantages in making decisions beyond what explicit and rational judgment can account for (Plessner & Czenna, 2008; Salas et al., 2010). Thus, education and experience can be used as proxies to categorize the expertise of management into experts and novices.

In summary, discretion in changing prices is constrained by social, organizational, and human factors that frequently impinge on these pricing decisions (Hague, 1971). Managers constantly assess the market, and if they identify a problem of market disequilibrium between supply and demand, they consider making an adjustment in price. Price change decisions stem from an ongoing process of gathering and interpreting information as managers seek relevant information. In the process of pricing, managers simultaneously recognize internal and external factors that vary due to the state of competition and demand and then change prices according to what the traffic will bear (Pearce, 1956; Pearce & Amey, 1957). Management requires the ability to scan the environmental forces that represent a pattern of events that emerge from several categories of the environment and are reported via a wide range of information sources relevant to the business environment (Olsen et al., 2008). Processing information requires the application of the perceptual, experiential, and cognitive skills of management (Olsen et al., 2008). If managers have not yet developed strong cognitive, experiential, and perceptual skills, they tend to miss the patterns emerging and then take actions based solely on what their competitors do. Thus, managers with limited experience and education tend to follow the actions of their competitors because they lack confidence in their own decision making.

In conclusion, the complex underlying concepts of discounting decision making have not been communicated, and how decision makers read and interpret signals and subsequently act upon them has not been discussed. Managers constantly process the external forces within the boundary of internal forces and make final decisions; thus, understanding the sequence and patterns of the process of price setting becomes critical. The purpose of this proposed study is threefold: (1) to determine how discounting options are created and reveal the corresponding

information processing related to the decision making; (2) to narrate events, stages, and cycles in hotel managers' process of making pricing decisions; and (3) to determine the role of human judgment, based on contextual factors, in the discount decision-making process.

CHAPTER THREE: METHODOLOGY

Introduction

The purpose of this study was to determine the creation of a discount choice and the corresponding information processing related to the decision-making process; to narrate events, stages, and cycles of decisions in choices made by hotel managers; and to determine the role of human judgment based on contextual factors in the decision-making process. To this end, this chapter presents the research design and procedures that will be used in the study. This research begins with observation and classification based on interviews with hotel managers and follows with experimental surveys used to form associations. Previous literature was used to formulate the hypotheses, and each of the research questions and the supporting hypotheses will be examined. Each of the methodological procedures used to test the research hypotheses, including sampling, questionnaire instrument, data collection, and data analysis techniques, are described.

New questions and inquiries

The positivist approach undergirding the lodging literature with regard to price setting stems from outcome as the unit of analysis and human agency guided by rationality. The literature review in the previous chapter revealed that the positivist approach has limited the understanding of choice behavior in the lodging industry. The main premise of this study is that subjective human agency, institutional, and social factors affect the discounting decision-making process in the lodging industry. Understanding the meaning of how practices are constructed and evolve over time can shed more light on the behavior of managers with regard to price setting.

Consequently, focusing on process as the unit of analysis requires a shift in the ontological perspective from positivist to constructionist and requires the framing of new questions in the field of price setting in the lodging industry.

Using process as the unit of analysis provides a rich, contextual foundation for deeper knowledge of and insights into how specific price decisions occur. Through processes, managers learn patterns of relationships between the parts and the whole (Wilber & Harrison, 1978). This study is undergirded in two theoretical frameworks: the constructionist approach and the process approach. These approaches reveal several common characteristics. First, both consider human agency to be the driver in shaping the choice process. Second, both eschew rationality as the only motivation of a person's choice; both consider beliefs, norms, and perceptions as shapers of behavior. Finally, both look to the choice framework as a process ranging from pre-choice to choice and post-choice while the interdependencies among these stages lead to a choice. In this study, the constructionist approach outlines the procedural steps that this study undertakes, whereas the process approach explains the conceptual underpinnings of the process of price setting in the lodging industry.

Surely, process patterns rely on a sequence of steps leading to a choice. For example, before a hotel manager decides to adjust a room price, he or she will inquire about the booking situation. If booking levels are below a set common threshold, the manager is likely to seek information to facilitate the choice to be made. The manager will consult with other stakeholders, rely on his/her memory, use analogy, plug into his/her belief system, or use groupthink to facilitate the selection of choice. If the manager believes that his/her experience is the best source

of information on how to proceed, he or she is more likely to rely on learned behavior. Yet when managers are asked whether they base their decisions on their perceptions and beliefs of the reality or intuition, they are most likely to favor a rational rule. If this rational rule is such a good basis for the choice, why is it that beliefs and norms figure so prominently in managers' decision-making process?

Rationality might play a major role when higher hotel prices depend on absolute performance; in other words, hotel managers know that they favors higher hotel prices over a higher occupancy rate, they will discard discounting as an option to break the competitive equilibrium. Yet when other managers follow suit, equilibrium is restored (i.e., by offering discounts), and everyone achieves less revenue. Relative performance seems to matter and depends on factors such as human agency, institution, and social surroundings. Thus, understanding how managers determine their relative positions in the market and how they limit or enhance their choices are of utmost relevance to hotel performance.

This study maps out the process of managerial discount decision making as managerial learned habits and norms play roles in the process. Furthermore, this study investigates the influences of external factors, institutional factors, and human agency on the discount decision-making process. The questions raised are as follows: (1) Under what conditions do managers consider a change in price? (2) What are the key information attributes needed to make a price change decision? (3) How do external, institutional, and human agency forces influence the processing of information and price change decisions?

As presented in Figure 5, this study endeavors to present a comprehensive and rich picture of the discount decision-making process in the lodging industry. The positivist approach embraces a rational presumption of the manager in compiling and assessing information that leads to price setting, including discounting. The rational decision-making process might be troubled due to the time constraints a manager faces. In setting initial prices, the manager has to decide on prices today while relying on demand projected for the future. The distance between the present and the future is exacerbated by the perishability of the production of hotel rooms. In addition, the market mechanism could contain a lot of noise induced by market structures, information asymmetries, and institutional weaknesses. Therefore, a discrepancy emerges between intention and actual implementation.

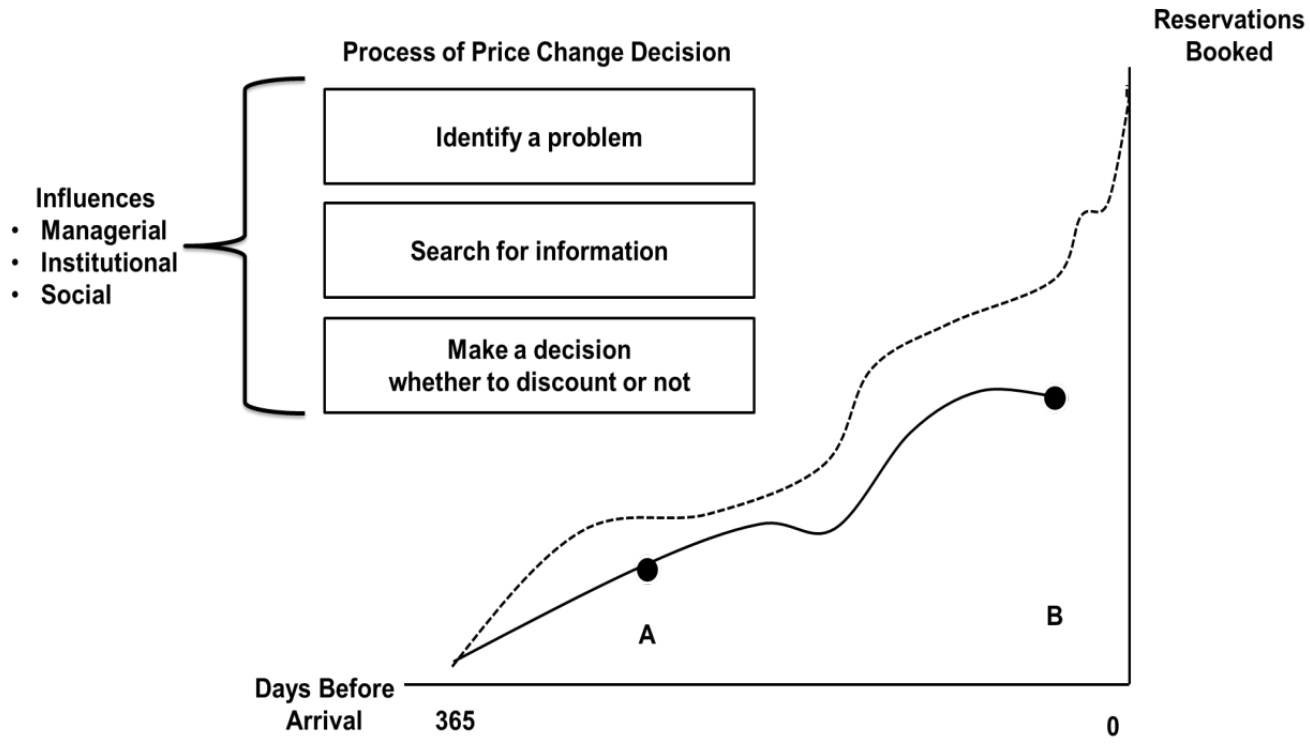


Figure 5 Proposed process of price change decision-making

The proposed framework of pricing goes beyond market equilibrium stemming from economic theories and includes other influences, such as social, institutional, and human agency. Hotels simultaneously monitor the room rates of competitors, and the process of making pricing-change decisions is influenced by competitors' strategic pricing (Craig, 2009). Previous studies have shown that the number of hotels in the same category and the average geographical distance to direct competitors in each location appear to have a strong effect on pricing (Becerra et al., 2012; Lee & Jang, 2012, 2013). Thus, the more competition that exists, the more likely managers will be to make discounting decisions in response to disequilibrium.

Operational definitions

- Discount: reduced rate from an initially set price.
- Process: sequences of events, stages, or cycles of decisions and choices made by an entity that narrate emergent actions and activities.
- Disequilibrium in demand: when a discrepancy between actual demand and expected demand occurs at a particular time.
- Lodging demand: occupancy rate is used as proxy to capture lodging demand. This study focuses on transient demand as transient demand tends to be price elastic and a change in price leads to a change in demand.
- Human agency: hotel managers who are directly involved in making pricing decisions.
- Lead time: Lead time is the number of days between reservation date and check in date. Booking window is used interchangeably.
- Competition: neighboring hotels that offer similar room rates and services.
- Rational judgment: objective judgment as managers considers a problem systematically and deliberately and engages in analyses in a timely manner (Bargh & Chartrand, 1999; Kahneman, 2003; Stanovich & West, 2000; Epstein, 1994, 2002).
- Intuitive judgment: intuitive judgment often can be a “habitual response” (Barnard, 1938).

Research design

A constructionist approach acknowledges the knowledge of organizations and strategies shaped through social processes where the true status of any concept, statement, or argument is dependent on its coherence with generally held beliefs and values (Durand & Vaara, 2006). Institutional and social influences should be taken into account in order to explain a phenomenon of emergent strategies (Mintzberg, 1994). In specific settings, management is the center of the argument, as human judgment distinctively interprets the nature of social phenomena; this process provides a richer picture of how price changes are adjusted to actual business.

Following Carlile and Christensen's (2005) suggestion for the process of theory building, the current research design consisted of three steps: observation, classification, and association. First, the observation stage included a careful observation, documentation, and measurement of the phenomena within the social and institutional context. Structured interviews with hotel managers were set up to detect the process of identifying a problem, learning relevant information attributes and the source of information, and selecting discounting decision making among alternatives. The phenomena were explored through not only information attributes, but also time components. The premise of this stage was that managerial decision making in pricing is a part of the organizational rules and routines; at the same time, individual managers seek to make sense of their actions and the actions of others (Scapen, 2006).

After the observation and description of the phenomena obtained through the interviews, the abstractions were categorized according to the attributes of the phenomena. Categorization schemes simplified and organized pricing activities. Such schemes highlighted relationships

between the phenomena and the outcomes of interest. Information attributes were categorized into static and dynamic information, and the source of information was characterized in external and internal sources. Finally, the moment in time when each information attribute influences the process was recognized.

In the third step, the association between the category-defining attributes and the outcome observed (i.e., discount or not) was explored using conjoint analysis. In theory building, this association stage helps researchers recognize which attributes relate most strongly with the patterns in the outcomes of interest. Once information attributes were identified in the previous stages, a survey was conducted in which a sample of hotel managers was exposed to different situational scenarios. This third step of the study attempted to investigate not only the importance of information attributes, but also the role of social, institution-, and human agency-related influences in managers' discounting decisions.

To accomplish these steps, interviews were utilized to explore the phenomena of pricing-change decisions at the observation stage. Subsequently, a survey instrument was created using information elements identified during the observations in order to detect the key information elements in the decision-making process.

Study 1

Sampling and data collection

Structured interviews were conducted with hotel managers directly involved in pricing. To locate experts in the field more effectively, the sample was drawn using a snowball

technique, starting with a few managers accessed through personal contacts and expanding through recommendations of earlier participants. The snowball technique is often used when studies involve experts where initial experts are selected and the initial experts refer additional participants (Zikmund, 2003).

Data analysis

An Institutional Review Board (IRB) was established to ensure that research involving human participants both protects the rights and welfare of study participants (Appendix A). Interview questions were prepared to detect the process of identifying disequilibrium between actual demand and expectation, selecting and interpreting relevant information, identifying the source of information, and making discounting decisions based on information collected within the social and institutional context. A sample of interview questions is provided in Appendix B.

Each interview took place at the manager's hotel and lasted 45 minutes. The interview was led by one trained researcher, and an assistant was present during each interview to help guarantee reliability and consistency across the interview. During the interviews, a detailed description of the price-setting process was obtained. The interviews were audio-taped and/or transcribed.

Debriefings were conducted and field notes taken immediately following each interview. Using script theory, each discount decision encountered was examined by specific scenes in specific acts (Abelson, 1976; Solomon, Surprenant, Czepiel, & Gutman, 1989). Observation of the phenomena was documented in words and numbers to help develop consensus among the

researcher and research assistant as well as participants regarding how each participant makes decisions about price changes and their general applicability (Hays & Wood, 2011).

Structured interviews

In an attempt to shore up the premise underlying the discount decision model, the objective of the interviews was to examine ontological issues in relation to a discount choice and the corresponding information processing. This inductive and constructionist approach was followed by Glaser and Strauss (1967) and Carlile and Christensen (2005). The major goal of the current study was to narrate events, stages, and cycles of decisions in choices made by hotel managers and determine the role of human judgment based on contextual factors in the decision-making process.

Sample profile

Seven hotel managers responsible for defining and implementing pricing strategies were interviewed, which met the requirement of the sample size for consensual qualitative research (Hays & Wood, 2011). Table 3 summarizes the demographic profile of the participants. Six managers were male (86%) and five managers had a bachelor's degree (71%). All seven managers were positioned at the executive management level (e.g. owner, revenue manager, rooms director, sales manager, general manager, and assistant general manager). Three managers were 25 to 34 years old, two were 35to 44, and two were 55 to 64 years old. The industry tenure of managers varied from 8 months to 38 years.

Participants' institutions varied in size: The number of rooms ranged from 63 to 774 rooms, and the number of employees ranged from 13 to 600 employees. In terms of ownership structure, three hotels belonged to a management company, two hotels were affiliated with a brand (one hotel was affiliated with a chain, but independently owned), and one hotel was independently owned with its own brand. All managers identified their institutions as either mid-scaled or luxury hotels.

Table 3 Sample profile of interviews

	Manager A	**Manager B**	**Manager C**	**Manager D**	**Manager E**	**Manager F**	**Manager G**
Firm ownership	Independently owned/affiliated with a chain	Independently owned	Management company	Management company	Management company	Brand franchisee	Others
Service type	Business/leisure	Resort	Business	business/leisure	business/leisure	leisure	business/leisure
Firm segmentation	mid price	mid-price/luxury	mid-scale	luxury	luxury	mid-price	luxury/mid-scale
Size of hotel	63	774	288	445	445	70	
Number of employees	13	600	111	350	350	15	
Who is involved	GM/Owner	Director of guest services; Director of Sales and Marketing; Revenue Manager; Managing Director	Revenue manager; Sales director; Rooms director; General manager; AGM	Revenue manager; Sales director; GM; Rooms director	GM; Director of revenue management; Director of sales	GM; AGM; Sales manager	Revenue Manager; General Manager; Director of Sales; Front Desk Manager
Gender	Male	Male	Male	Female	Male	Male	Male
Education	Associate degree	Bachelor's degree	Master's degree	Bachelor's	Bachelor's	Bachelor's degree	Bachelor's degree
Age	25-34	55-64	35-44	55-64	35-44	25-34	25-34
Title	GM/Owner	Managing director	AGM	GM	Director of revenue management	GM	Revenue manager
Industry tenure	8months	38	14	36	18	6	10
Company tenure	8months	4	14	20	9	6	2

Key actors

In most hotels, multiple actors were involved in the pricing process. Managers in numerous departments appeared to participate in making discounting decisions. Departments such as sales and marketing, revenue management, rooms division, and front desk/guest services were included in the discussion. Managers from each department joined a general manager and assistant general manager to make adjustments in pricing. Given the multiple actors involved, weekly meetings seemed to be the preferred discussion mode for ensuring that the maximum benefit was obtained. Regular meetings were held to discuss and resolve any issues that arose. In particular, managers communicated effective strategies in the long run and developed corrective actions for dip dates in the short run.

Managers described that their decisions on pricing issues were based on the group discussion; each manager contributed to the discussions equally. Manager F depicted their pricing meeting by stating that “it is always prudent to discuss discounting decisions with your managers. Working as a team and keeping everyone in the loop helps ensure you are getting the best rate possible without any confusion between hotel employees or the companies you are working with.” Not every hotel had a revenue manager on their property; relatively smaller hotels with fewer than 70 rooms did not have a revenue manager while larger hotels had a defined revenue management position that exclusively monitored reservation pick-up patterns and business trends in order to maximize distribution and accommodation yield. Among these larger hotels, 43% of the managers agreed that the revenue manager was the most influential in pricing decisions.

Using similar logic, it was noted that, depending on the size of firm, the number of people involved in pricing was different. Smaller hotels included fewer people in the decision-making process compared to larger hotels. For example, Manager A, with 63 rooms, was the only person in charge of making pricing decisions, whereas Manager B, with 774 rooms, stated that five people were involved in pricing. Such information supports previous studies' conclusions that larger firms administratively deal with a large number of organizational members to make decisions (Bruns & Waterhouse, 1975; Child, 1972; Lee-Ross & Johns, 1997; Merchant, 1981).

Managerial discount decision model

The identified actors, activities, and resources are interrelated in a general system framework, as depicted in Figure 6. This framework reveals a process ranging from strategic decision making to operational decision making and reflects the interdependencies among the stages leading to a choice of discounting. The way human judgment would play through on the horizontal form as time nears the arrival date is described through five stages: forecasting, monitoring, identifying the problem, assessing the information, and making an adjustment. During each stage, the hotel's performance would display distinctive characteristics, and managers would make appropriate operational decisions after assessing different types of information.

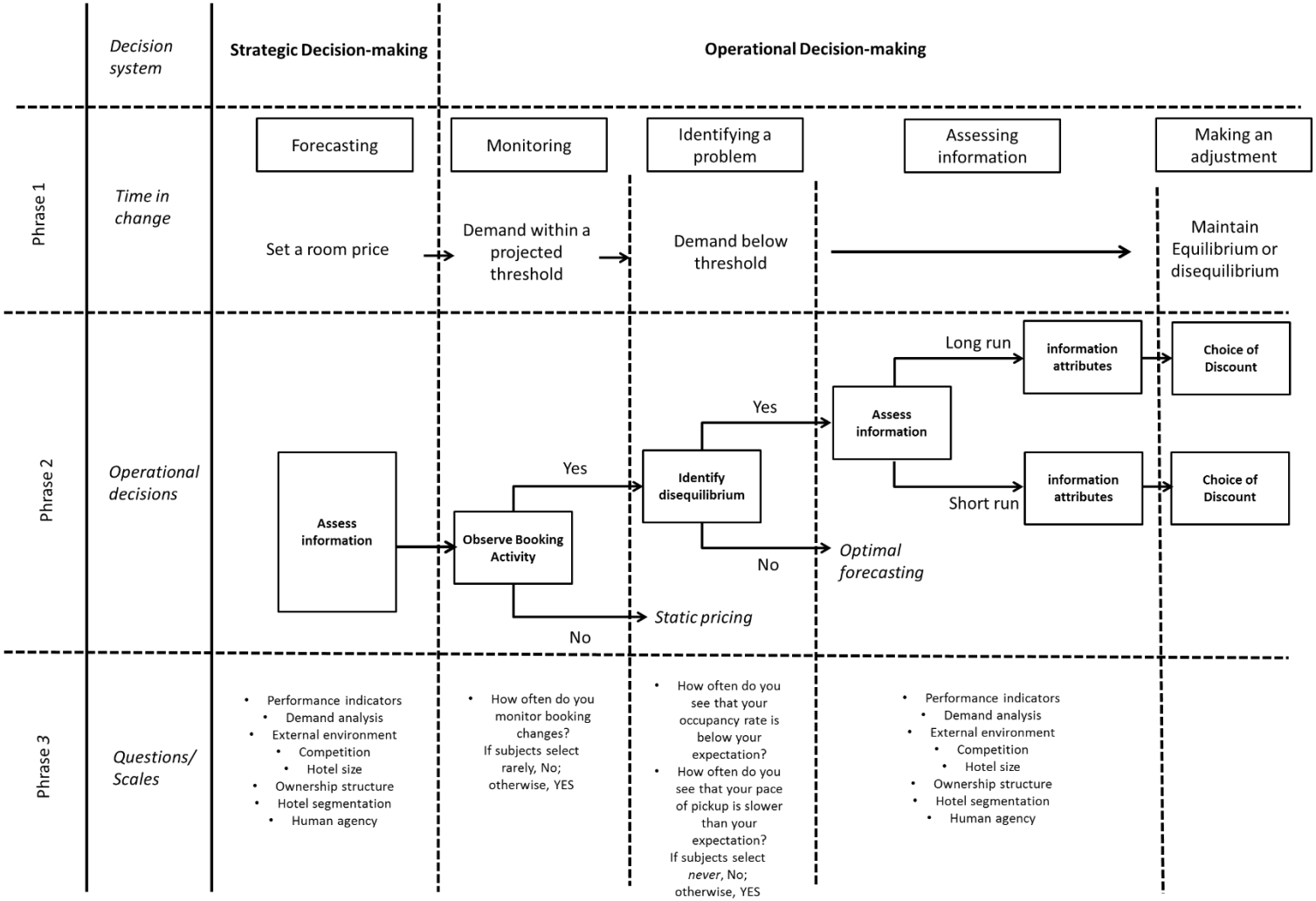


Figure 6. Process of discount decision-making

Stage 1: Forecasting

The objectives of forecasting were straightforward among managers: revenue maximization. Categorized as a strategic decision-making stage (Jones, 1999), long-term decisions were made at the forecasting stage. In the long run, most managers shared similar goals to ensure that the maximum benefit was obtained from market segmentation and rate strategies. The importance of accuracy of forecasting was recognized as managers attempted to get enough rooms on the books before the primary booking window in order to avoid short-term discounting, rate discounting, and opaque usage. In addition, two managers pointed out issues related to costs. Managers were aware that the bottom-line rates should cover break-even points to ensure that they at least meet or exceed their overhead costs per room.

In the forecasting stage, it was observed how managers set their initial rates. According to the interviews, forecasting took place six months to a year in advance for the upcoming year, indicating booking window ranges from a year prior until the arrival date. Initial pricing was set up with a variety of considerations—mainly, market trends and past performance. Although managers had access to different types of information, most managers considered their past performance indicators, such as occupancy rate, average daily room rate (ADR), and pick-up speed of previous years, to be the most useful. It was critical to evaluate the same time period for the current year and previous year. Historical performance helped managers ensure that their price strategies met their hotels' standards and created a baseline for opening-up strategies and length-of-stay patterns to drive businesses. Past performance was captured through internal reports tracking the pace and positioning relative to the previous year. Internal sources included the front desk, corporate office, franchise office, sales forecasting report, and audit package.

In conjunction with internal analyses, many managers subscribed to external reports from STR, TravelClick, Marketvision, and Rubicon to evaluate their competitors' past performance and their market share in the competitive set. Considered as great resources, these reports provided managers with information about what was happening in different global distribution systems. From the reports, managers could see uptrend or downtrend in the market. For example, TravelClick's Demand360 is competitive market intelligence available to the hospitality industry that provides future visibility into the market and share performance across all distribution channels and segments. External reports helped managers look forward to determine what would happen in the business environment and how hotels' performance would actualize at the end of the day. Managers then made their pricing decisions based on the information.

In addition to subscriptions from STR, TravelClick, Marketvision, and Rubicon, managers secured information from third-party intermediaries and social media to further optimize the mix of businesses across a set of days and scan the environment that could influence their performance. As part of the demand analysis, tools such as the Convention and Visitors Bureau calendar combined with known demand events and holiday shifts were also considered important to look for before opening up price strategies.

Stage 2: Monitoring booking activities

In terms of operational procedures, all managers agreed that they monitor pick-up patterns, lead times, and business trends on a regular basis. Booking changes were looked at roughly once a quarter in terms of booking window and changes to the mix of distribution

channels (e.g., online, hotel direct, and global distribution system). However, monitoring booking activities could occur more frequently than every quarter if the hotel perceived a change in customers' buying habits or production-level changes to certain channels. Managers started giving closer looks at booking changes 60 days before an arrival date on booking window. When managers monitored booking activities, they typically looked at the pace and position of the booking. As the arrival date neared, the frequency of checking booking changes increased to two to three times per week. During busy time periods, managers would look at booking changes every two to three hours a day. Manager B described his experience during the Easter holiday:

> We have Easter coming this month. Our strategy is that we are not going to discount our rates, and we will be the last ones to be filled up [in the market]. Knowing we are going to have demand for Easter, we don't worry about [a low occupancy rate now]. Currently, we still have 110 rooms to be sold for that night, but I am not worried about it. It will come. We will be slowly filling up. That means we will charge higher rates for those rooms that I could have filled up two months ago, but we want higher rates so we have to be patient. By next week, I will give a really close look at booking activity every two to three hours a day to make sure [my price strategies are working].

In sum, management constantly monitored booking activities to gain maximum effect over their pricing strategies and to take corrective actions according to market trends.

Stage 3: Identifying the problem

As managers checked booking changes, they evaluated the pace and position of booking compared to the previous year. Managers often identified a disequilibrium between actual

booking and forecasting. In terms of the pace of booking, programs such as EasyPMS provided managers with daily and weekly pickups. The program would show managers that one week's pickup should be more than half of the rooms, for example. The closer the arrival date was, the more they should be picking up. If managers did not see such a pattern, it indicated disequilibrium; managers then needed to define the problem and take appropriate actions. In other words, based on forecasting, hotels might expect to have a 50% occupancy rate by 30 days before an arrival date. If booking has not reached the 50% occupancy rate, then managers should start considering strategies to generate more business.

Another example was the Easter weekend, which shifted from April in 2012 to March in 2013, making a straight year comparison over the previous year not useful. The managers were required to detect changes and make adjustments to the system. External events, such as weather, group cancellations, no-shows, and flight delays/cancellations, also caused variances in forecasting. One of the managers described the uncertain dynamic environment:

> We are dependent on all different factors and you have to rate them and make decisions based on them. But these factors are not always right. A couple weekends ago, the cold storm came in. Normally we yield last-minute reservations but we didn't have any. The weather was gorgeous last weekend and we must have picked up 750 rooms in one day for that weekend. We have to accept what is happening to us. We can't make excuses but try to make the right decision.

Other examples included changes to government policy and the opening of new inventory or the renovation of existing inventory. For example, the government sequestration and

budget cuts heavily affect per diem-based areas where private companies that provide the bulk of negotiated business are tied to government contracts and per diem rates. One of the managers shared his recent challenge as his hotel was facing new inventory in the immediate market that was aggressively undercutting rates for negotiated clients to build a base. The hotel's biggest competitor was coming from renovations, but still undercutting the market in rates and forcing competitors to lower rates as well as they were the rate leader.

Managers focus on getting enough rooms on the books before an arrival date to avoid short-term discounting or opaque usage (e.g., releasing rooms to third-party distribution channels), but discounting is still a reality for the managers. Managers constantly faced discrepancies between actual reservations and forecasting, and management's appropriate operational actions to control the actual booking and pace of booking were essential.

Stage 4: Assessing information

When managers encountered disequilibrium, they sought various information and activities facilitated from different sources to validate actors' choice to discount or not. Pricing heavily depended on their revenue position compared to the previous year and the feasibility of the sellout. For example, if a hotel is about to sell all available rooms, managers would drive business through shoulder nights by imposing minimum nights of stay or offering relative cheaper rates. Managers could also make people pay a premium over the higher demand dates.

To identify missed opportunities, two managers emphasized Denial and Neglect reports. A Denial report tracks reservations that the hotel denies due to customers asking for too low rates, and a Neglect report shows the number of reservations that customers chose not to make

because quoted rates were too high. Manager C followed his intuitive “less than 35 rule”: If more than 35 customers refused the rate, it would be a red flag, at which point he would consider adjusting the rates.

At this stage, managers placed significant importance on learning about competitors’ actions and performance. Managers described their own competitors and their relationships with them, and several common themes emerged from the interviews. Competitors were defined as any hotels within a certain radius that charge similar rates on a par with similar quality and product and that cater to the same customer segment. To put it in simple terms, the customer would go to my competitors if my hotel were not available because my competitors offer similar rates as well as similar products and service. Location was an indicator of competition as hotels two blocks away are more of a competitive concern to managers than those 25 miles away. Thus, demand is elastic in that rate changes could cause a change in a hotel’s demand in the competitive market.

Managers emphasized that their hotels should remain competitive in the market. Most managers agreed that they would adjust their rate strategies if primary competitors made rate adjustments. Manager C stated that

> my goal is RevPar at 110-115%. Let’s say I have 100 rooms out of 500 rooms in the area, which is 20% of the market share. If I sell 20 rooms, that is the fair share of RevPar at 100%. But our goal is 10-15% more from the share which will be loss at competitors.

Because the hotel’s performance was influenced by its competitors, managers showed great concern about learning how their competitors were doing in terms of performance and rate

strategies. Managers kept an eye on occupancy rates and ADRs of their competitors, as Manager F reflected: “How is the market driving the price?”

To obtain information on competitors, managers assessed reports available from STR or Rubicon on their occupancy rate, ADR, and RevPar in comparison to their competition set that each hotel picks. With this information, managers had a better understanding of whether they are sacrificing ADR for occupancy rate or vice versa. In addition, nowadays a lot of information is publicly available via the internet. Managers assessed competitors’ websites, third-party intermediaries (e.g., Expedia), and social media to find out competitors’ performance, business trends, and customers’ buying habits. Managers also stressed the important rule of word-of-mouth among hoteliers, and they would call around to other hotels to learn about their current performance.

Although managers would never really stop gathering information about their customers and competitors, they had to analyze the information and make a decision at some point. Management’s actions and decisions varied depending on the problem and the complexity of the issue. However, it was important to keep data gathering as simple and clear as possible to avoid confusion and the clouding of original issues. Manager B explained:

> It is not a lot of information. It is key information. You can make pricing as complicated as you want or you can make it simple as you want. They have got thousands of [pieces of] information at the corporate office. For me, I use a certain [amount] of information based on my peak demand, then you will pretty much get the same type of information as you get from all the thousands of reports. There is only so much information you can

absorb. I always value the 80:20 rule. Sometimes we are protected by looking at 20% but not focusing on big things at 80%. 80 would tell you what you need. All other things will take you hours to analyze, and you are not getting out from it. So I have the four to five most important reports that I look at and you make decisions based off them.

In summary, the lodging industry is an ever-changing industry; if managers fail to keep up with ongoing information about quality, product, customer service, and competitors, they would have a hard time managing their operations to secure the maximum effects. Thus, management would constantly monitor booking activities. If managers identify disequilibrium in demand, they assess a variety of information, particularly in terms of how their competitors are acting.

Stage 5: Making an adjustment

In a situation where managers are forced to deal with an uncertain and time-pressured environment, their response to low occupancy rates are simply to adapt and change. Managers considered a price adjustment (1) if the pace and position of booking made a significant change, either positive or negative, relative to forecasting and (2) if primary competitors made rate adjustments and showed significant gains in the competitive market. Such conditions would have immediate effects on hotels' performance. Thus, it is critical to monitor pickup patterns closely for changes in bookings so that management can take appropriate actions in a timely manner to control booking changes.

Managers identified these two conditions, and both the pace and position of booking are closely related to competitors' price changes. If competitors drop room rates significantly, the

pace and position of booking will be negatively affected. The characteristics of corrective actions seem responsive to disequilibrium on a time horizon. In other words, by the time managers notice changes in the pace and position of booking and competitors' price changes, the problem has already occurred. However, the way management responded to the problem seemed different depending on the characteristics of disequilibrium.

If the pace and position of booking showed a discrepancy with forecasting, managers made operational adjustments on rate strategies by controlling not only room rates, but also lengths of stay (LOS) and channels. For example, if managers saw the pace of booking moving really slowly, they would want to speed it up a little bit. They could do so by lowering the price. Discounted rates would attract immediate short-term demand in the market and solve the issue of slow-paced booking. Another option is that managers could loosen the restriction of minimum LOS. Then they could keep the same rate but now accept any reservations regardless of LOS. When dealing with a low occupancy rate, managers could also allocate more inventories to third-party online distribution channels.

Nevertheless, if competitors made rate adjustments and showed significant gains in the competitive market, managers appeared to take different approaches. The moment managers detected their competitors dropping rates, managers did not engage in trial and error with LOS and channels. Instead, the hotel immediately followed suit based on previously tested rate positioning to the extent that customers perceived their hotels as still valuable, but room rates matched those of their competitors. Manager A recalled "the heads in the beds concept is not good in the long run, but great for the short term." He also discussed his experiences of making

discount decisions at times when he felt he had no choice but to follow suit: “If my competition all of sudden drops their rates dramatically, I really don’t have to think too hard [but follow suit]. Most non-resort hotels have to squabble over a $5-$10 difference in rate.” Managers would open and close their discount levels according to the market share to stay competitive in the market.

To understand the process of discounting, careful observations and documentations were undertaken. It was concluded that the discount decision-making process was complex, and existing theories on pricing did not capture this complexity. The abstractions were then categorized according to the attributes of the phenomena. Categorization schemes aim to simplify and organize discount decision-making processes in ways that shed light on relationships between the phenomena and the choice of discounting. Managers’ discount decision-making process was described based on five stages faced as an arrival date neared: forecasting, monitoring, identifying the problem, assessing information, and making an adjustment. During each stage, the hotel displayed distinctive characteristics and careful observation, and documentation and measurement of the phenomena were done within the context. These constructed themes are considered parts of theories, building blocks upon which bodies of understanding about discounting and managerial interaction were built within the lodging industry.

Management was the center of the argument as human judgment distinctively interprets the nature of social phenomena, and the process provides a richer picture of how price changes adjust to actual business. The choice, such as to discount or not, was the product of human agency and social forces over time as human agency and its perception of reality within a

specific context infuse meaning into business practices. The constructionist approach filters which aspects of the context matter in the construction of a specific choice by retrieving subjective accounts of those involved in the process in generating and sustaining patterns, procedures, and routines. The findings of the study identified the habitual management practices and enhanced the understanding of how management's knowledge is constructed as well as how this knowledge is applied to justify actions and choices. Learning about the discount decision-making process provided new insights into the resources and capabilities required to set and change prices in the lodging industry.

In summary, managers constantly evaluate their current performance in comparison to the past and to competitors. The situational information factors were identified as substantial indicators when managers considered discount decision making as an adjustable action to maintain equilibrium. This information was typically assessed considering three factors in the following sequence: position of actual booking relative to past performance, competitors' price changes, and external factors (e.g. weather, change in inventory levels, and cancellations).

In the next step, the association between the category-defining attributes and the outcomes observed are explored. In the stage of descriptive theory building, researchers recognize and make explicit what differences in attributes and in the magnitude of those attributes correlate most strongly with the patterns in the outcomes of interest.

Study 2

Facing the disequilibrium between reality and expectation, managers assessed relevant information and made discount decisions. Throughout this process, managers signaled situational attributes to consider dropping room rates. The second part of this research was designed in order to learn which information attributes contribute the most to discounting decisions and investigate how institution (e.g., firm size and operation structure) and human agency (e.g., age, job tenure, and education) affect discounting decision-making. It also served as means to confirm the findings from the interviews empirically and validate the managerial process of discount-decision making.

Hypothesis development

The lodging industry constantly faces an uncertain business environment due to the actions of competitors, suppliers, customers, and regulators. To reduce or eliminate uncertainty, managers engage in information-search activities and make strategic decisions based on the information gathered (March & Simon, 1958; Olsen et al., 2008). The process of gathering information can leave managers encountering too much information to comprehend it all (Olsen et al., 2008). Thus, decision makers can simplify the decision process by selecting that information most relevant to the organization and eventually developing patterns that break down complex problems into more manageable units (Child, 1972; Duhaime & Schwenk, 1985; Hitt & Tyler, 1991; March & Simon, 1958; Weick, 1969). Thus, it is proposed that managers treat some information more heavily than other.

Proposition 1: Managers treat some information attributes more heavily than others when making discount decisions.

The extent of time managers have before making a decision might determine how they make a discount decision. During the discount decision-making process, management often does not know how to trade off costs against benefits, risk against value, and immediate solutions against long-term objectives. Given more time, management could consider seeking more information and resources or even deciding to wait to see if the situation improves over time. The more time people have to complete a task, the less likely they are to do it (Tversky & Shafir, 1992). If more time is permitted, environmental conditions can be better understood and can easily be factored into decisions, thereby enabling managers to anticipate with some certainty and plan for changes based on experience and past information (Dean & Sharfman, 1996; Olsen et al., 2008). Thus, management might defer the decision and maintain the status quo. The more time managers have, the less likely managers are to make a discount decision.

With a short time to react to the environment, effective decision making will be challenging (Sutton et al., 1986). Making pricing decisions in the short run is more critical due to the elasticity of demand and the perishable nature of the hotel products. Hotel managers are aware that analytical tools will not catch up with the new level of demand during the short-term horizon until actual bookings start to accumulate in the reservations systems. If some changes need to be made in the short run, the computer system will not detect such changes. Managers lack the time required to process information, forcing them to make a relatively fast decision with limited information. As a result, management tends to abandon a comprehensive, rational

analysis and instead use an instant reaction to disequilibrium. The automatic behavior that management has learned over time relates to changes in price, requiring a discount decision. Therefore, the shorter the booking window is, the more importance managers place on making a discount choice.

Proposition 2: The part-worth of the "7 days in advance" level of the booking window attribute is higher than the part-worth for a different level of that attribute.

A discrepancy exists between intention and actual implementation due to the time constraints facing managers. In setting initial prices, the manager has to decide on prices today while relying on demand projected for the future. The distance between the present and the future is exacerbated by the perishability of the production of hotel rooms. From the interviews, managers agreed that they constantly identify disequilibrium between actual booking and forecasting. Hotels expect to pick up bookings as the arrival date nears. If managers do not see a pattern, disequilibrium occurs; then managers need to detect the problem and take appropriate actions, such as a discount choice. It is expected that managers are more likely to make a discount decision the poorer their current booking performs in comparison to forecasting.

Proposition 3: The part-worth of the "10% lower occupancy rate" level of the position of booking attribute is higher than the part-worth for a different level of that attribute.

In the lodging industry, hotels examine the actions of competitors, such as competitors' rack rates, which can be easily obtained from websites, via social media, or by calling around (Kotler et al., 2008). Hotels' performance is directly influenced by competitors' pricing strategies as small differences in price can make a significant difference between winning and

losing business at the local level (Abbey, 1983; Craig, 2009; Relihan, 1989). Thus, hotels constantly pay attention to their competitors' room rates. Faced with their competitors setting discounted rates, management opts to follow the actions of their competitors even if managers are not sure about the intentions behind and potential consequences of each competitor's action (Akerlof & Kranton, 2005; Barney, 1986; Nelson & Winter, 1982).

According to social influence theory, people change their behavior to match the responses of others because people have a desire to gain the approval of those in their social environment (Cialdini & Goldstein, 2004; Quinn & Schlenker, 2002). An individual hotel's actions are affected by the actions of other hotels, and the actions of other hotels then influence the action of an individual hotel. Faced with lagging demand, if competitors drop their room rates, hotels will follow the actions of the competitors to sustain their market share. The interviews indicated that the moment managers detected their competitors dropping rates, managers immediately followed suit and matched their competitors. Thus, it is proposed that managers prefer choosing a discount choice as their bigger competitors drop their room rates.

Proposition 4: The part-worth of the "$10 lower competitor's rate" level of the competitor's room rate attribute is not significantly higher than the part-worth for a different level of that attribute.

Extent competitors' rate adjustments influence a hotel's discount decisions. Managers open and close their discount levels according to the market share to stay competitive in the market. Managers continuously take account of the influence of the external environment when making strategic decisions. Sudden changes in bookings require managers to take appropriate

operational actions to control the actual bookings and pace of bookings. If a hotel faces sudden cancellations, managers might prefer making a discount choice.

Proposition 5: The part-worth of the "anticipate cancellations from group/contract bookings" level of the external factor attribute is higher than the part-worth for a different level of that attribute.

Institutional factors such as firm structure and firm size influence the price-change decision-making process. The firm structure of the lodging industry includes franchises, management companies, and independent owners (Croes & Semrad, 2012; Piccoli et al., 2003). As each different ownership structure has different objectives that have a major influence on pricing and pursues its own logic and rationality, it is hard to establish a single decision-making process throughout the industry. Franchised hotels and hotels run under management companies are affiliated with the chain's brand name, so they have limited flexibility in adjusting pricing as their contracts require compliance with the chain's high quality controls for the hotel product, thereby impelling hotels to stick to the standards and rules.

However, independent hotels do not affiliate with any brands or chains, so they have the freedom and flexibility to make adjustments in price. Independent hotels have the ability to be more responsive with regard to their customers' demands (e.g., discounted rates). Due to limited financial resources, independent hotels attempt to maximize cash flow, which leads to offering discounted rates to fill rooms. In addition, independent hotels have less access to the volume of information as they do not have the corporate office that provides all the information available.

With flexibility in operation but less accessibility to resources, hotel managers at independent hotels are more likely to make discounting decisions compared to those at brand-affiliated hotels.

In a similar manner, after the implementation of yield management, large hotel corporations and small to medium-sized hotels show different objectives and culture (Kotler et al., 2008; Lee-Ross & Johns, 1997). Whereas the corporate department or regional or unit managers typically handle pricing based on the guidelines established by the corporate management in larger companies, most small hotels are not publically traded and, thus, are concerned with other objectives, such as survival. Therefore, depending on firm size, hotels are expected to have a different process for making a discount decision. Smaller firms tend to focus more on cash flow and, thus, make discount decisions in order to stimulate demand. Therefore, it is hypothesized that managers in small, independent firms place different importance on information attributes based on different hotel structures. The null hypothesis is rejected if the average importance of the attribute from large, franchised firms is not significantly different from the average importance from small, independent firms.

Ho: Managers do not place significantly different importance on information attributes depending on different hotel structures.

H1: Managers place significantly different importance on information attributes depending on different hotel structures.

Management shows a difference in preferred procedures and values in decision making (Payne et al., 1992; Shafer, 1987). Decision-making reflects management's capability of gathering and processing the information. Through the decision-making process, managers

accurately anticipate factors within the environment that influence businesses and make choices after considering these factors, thereby resulting in better performance compared to those managers who do not do so (Dean & Sharfman, 1996). The extent of information reviewed, the range of individuals consulted, and the formality of information processed varies among individuals (Olsen et al., 2008). Because the great variance of processing information occurs among managers and firms, the ability to change prices depends on processes the managers have in place (Dutta et al., 2003).

Human agency is related to the expertise reflected through experience and education. Managers' expertise is related to the knowledge acquired through work experience, thereby enabling them to achieve high levels of performance (Ericsson et al., 1993). The ability to deal with disequilibrium induced by economic shocks is largely a function of education; better educated individuals adjust more successfully than less educated agents (Schultz, 1975). An appropriate adjustment to shocks requires the collection and processing of new information, and better educated individuals would be expected, on average, to excel at such tasks (Barrett et al., 2006). Experienced and educated managers use a collection of complex patterns in the field to perceive larger and more meaningful patterns in the environment more rapidly than those who are without such experience (Gobet & Simon, 1996; Neisser, 1976; Simon & Chase, 1973). Whereas less experienced managers tend to go more by the principles they learned from books during their education (Harung, 1993), an expert learns to ignore the irrelevant pieces of information and concentrate on the critical ones (Harung, 1993; Prietula & Simon, 1989). Therefore, it is hypothesized that managers place significantly different importance on information attributes depending on different human agency in response to disequilibrium. The

null hypothesis is rejected if the importance of the attribute is not significantly different between different management expertise and experience.

Ho: Managers do not place significantly different importance on information attributes depending on different management expertise and experience.

H2: Managers place significantly different importance on information attributes depending on different management expertise and experience.

Survey design

Choice-based conjoint (CBC) experiments were used for this study to gain a better understanding of the decision-making processes with regard to deciding which situation leads to a discount choice. The CBC survey method entails presenting respondents with several hypothetical scenarios with various combinations of information attributes. Managers were given scenarios that contain a different set of situational information and asked to choose one scenario in which managers would make a discount choice in comparison to other scenarios. Managers got to compare different situational information across scenarios and make a final choice. The importance of situational information elements was identified, thereby defining the set of information determinants used when choosing a discount choice. In this way, managers determined which situational information signals a red flag for managers when making a discount decision while taking into account all available information.

Based on structured interviews with pricing decision makers within the hotel, the situational information attributes were identified as managers shared the importance of information; these were included in the survey. When managers considered making discount

decisions, this situation was typically assessed considering four factors in the following sequence: lead time, position of actual booking relative to past performance, competitors' price changes, and external factors.

The attributes were obtained from interviews conducted with individuals who represent the population from which study subjects are likely to be drawn. The attributes chosen were found to be meaningful and relevant for developing patterns inherent in the discounting decision-making process. The levels assigned to each attribute should also be realistic ranges under which an attribute might vary. First, from the interviews, the range of lead time was identified that managers considered discount decisions within the frame of a week, a month, and two months. Second, the attributes of two performance indicators—the pace of bookings and position of bookings—were inherently linked. For example, the pace of bookings is already embedded in the position of bookings as managers evaluate their performance. If pickup speed is slower than expected, their position of bookings should be lower than expected. Due to the similarity in nature, the position of bookings was selected to represent the current performance in order to avoid implausible combinations of attribute levels. Thus, as a performance indicator, occupancy rate (position of bookings) was used in the questionnaire.

Third, the range of competitors' room rates was identified during the interviews. According to managers, competitors' room rates were easily accessed via the official website, third-party websites, and other resources. Managers were well aware of how much their competitors charged for their rooms. Managers agreed that a $5 to $10 difference in room rates

makes a big difference in the competitive market. Thus, in the questionnaire, the competitor's room rate ranged from $10 higher to $10 lower than the hotel.

Fourth, several exogenous factors were identified during the interviews, such as weather, new inventory, meeting cancellations, group cancellations, holiday shifts, and recessions. After a careful consideration of each exogenous factor, the potential for group cancellation was employed in the questionnaire because all types of hotels would deal with group cancellations. For example, some hotels would not be influenced by a meeting cancellation if they did not have meeting facilities. Hotels would not be impacted by hurricanes and tropical storms if these hotels are located outside hurricane regions. New inventory within the region and economic recessions would be less common for many hotels, so they might not seem realistic to the participants. Therefore, the potential for group cancellations was used in the survey as it captured a sudden cancellation in booking due to recession, weather, meeting cancellations, and other reasons.

Experiments were thus designed using different lead times, occupancy rates, a competitor's room rates, and exogenous factors, as shown in Table 4. A total of 90 hypothetical scenarios combining different levels of attributes were developed, for a 3 (lead time: 7 days, 30 days, vs. 60 days ahead of an arrival date) x 3 (occupancy rate: same as the previous year, 5% lower, vs. 10% lower than the previous year) x 5 (a competitor's rack rate: $5 lower than yours, $10 lower than yours, same as yours, $5 higher than yours, vs. $10 higher than yours) x 2 (exogenous factors: potential for group cancelation vs. no potential for group cancellation) factor analysis.

As in most conjoint analysis studies, the large number of possible combinations of attributes and levels made it implausible to generate a design based on all possible combinations. Participants' cognitive limitations and time constraints do not allow for the consideration of a large number of profiles. Thus, a fractional factorial design was used based on an algorithm by Zwerina, Huber, and Kuhfeld (1996). A fractional factorial design, which assumes no interactions between attributes and ensures the absence of multicollinearity, is used to reduce the number of scenarios to the smallest number necessary for efficient estimation of utility weights (see Dey, 1985, and Zwerina et al., 1996, for details).

Table 4. Conjoint attributes and levels

Attribute 1	Booking window:
Level 1	7 days in advance
Level 2	30 days in advance
Level 3	60 days in advance
Attribute 2	Position of booking:
Level 1	Same
Level 2	5% lower
Level 3	10% lower
Attribute 3	Competitor's room rate compared to yours:
Level 1	$10 higher
Level 2	$5 higher
Level 3	Same
Level 4	$5 lower
Level 5	$10 lower
Attribute 4	Exogenous Factor:
Level 1	Do not anticipate cancelations from group/corporate bookings
Level 2	Anticipate cancelations from group/corporate bookings

Using a fractional factorial design, a reduced set of 14 scenarios was given to participants. Managers were presented with the scenarios in which they might consider making a

discount decision. Scenarios were built on the leisure demand because the leisure market was considered to be more sensitive to price changes and discounting strategies were mostly implemented toward the leisure market. Industry and academic experts checked the face validity of the scenarios.

The preference elicitation was obtained using choice sets. Preferences were established using the discrete choice approach, which was preferable because it more closely resembles many real-life decisions and is consistent with random utility theory (Louviere, 1988; Louviere, Hensher, & Swait, 2000). Measurement error might be introduced by the order in which attributes are presented, the question order, or the number of attributes and levels. This error was reduced by using three different versions of questions. Scenarios were placed into choice sets by maximizing the D-efficiency score (Zwerina et al., 1996). Based on this criterion, 14 choice tasks were created for each survey version. Respondents were randomized to receive one of three survey instruments.

In order to maximize efficient designs, several procedures were addressed in the design—namely, level balance: levels of an attribute occur with equal frequency; orthogonality: the occurrences of any two levels of different attributes are uncorrelated; minimal overlap: cases where attribute levels do not vary within a choice set should be minimized; and utility balance: the probabilities of choosing alternatives within a choice set should be as similar as possible (Zwerina et al., 1996) (see Appendix C).

Sampling and data collection

To ensure that the research protects the rights of participants, an IRB was established (see Appendix D). The population is hotel managers directly involved in pricing decisions within hotels in the United States. This study attempted to gather information about the discount decision-making process, and only limited numbers of participants were entitled to make such decisions within each hotel. It was also difficult to gain access to decision makers with regard to pricing in the lodging industry. To identify this distinct population, snowball sampling was used. It is considered cost-efficient because locating respondents to obtain such information can take time and finances, if it is even possible.

Snowball sampling uses a small pool of initial informants to make referrals who meet the eligibility criteria and could potentially contribute to the study. The success of this technique depends greatly on the initial contacts and connections made. The term “snowball sampling” reflects an analogy to a snowball increasing in size as it rolls downhill (Morgan, 2008). The more relationships are created through social networks, the more information will be received. A small pool of initial informants through social networks was invited to participate in the study via an online survey, designed and built using Sawtooth Software. They were then asked to nominate other informants who met the eligibility criteria and could potentially contribute to the study.

In order to achieve a 95% confidence level of generalizability for a population of 52,529 hotel properties in the United States, a sample of 357 hotel properties would be ideal (Krejcie & Morgan, 1970). However, the recommended rule of thumb for defining the number of participants targeted to enroll in a CBC analysis is as follows:

$$\frac{n * t * a}{c} \geq 500$$

(2)

where *n* is the number of respondents, *t* is the number of tasks, *a* is number of alternatives per task, and *c* is the number of analysis cells. When considering main effects, *c* is equal to the largest number of levels for any one attribute (Orme, 2010). Considering that this study involved 14 tasks, 4 alternatives per task, and 5 analysis cells, a sample of 45 hotel properties would be appropriate.

$$\frac{n * 14 * 4}{5} \geq 500$$

(3)

Approval to conduct the study was obtained from the university's institutional review board (e.g., participation is voluntary and participants' names and identifying information are not collected). To increase the participant response rate, multiple contact methods for survey research were followed (e.g., expressed appreciation for participants' support, willingness to share the results with participants) (Dillman, Smyth, & Christian, 2008).

Reliability & validity

Several procedures were used to ensure validity and reliability. From the interviews, the key dimensions were ascertained from experts in the lodging industry, thereby meeting the requirement of face validity. Information attributes and levels obtained from the interviews were used in the survey, thereby validating information elements by a different set of managers. The manipulated set of scenarios were given to all participants in an experimental design to ensure

internal validity, and the experimental design further permits external validity that the results from the study can be generalized beyond the experimental subjects (Hair et al., 2006; Zikmund, 2003). With regard to reliability, the stability of the part-worth estimations at the group level was measured by inter-correlations between part-worths using each single paired comparison as the input.

Data analysis

A conjoint analysis was used to examine the discount decision-making process. Conjoint analysis, which has been used for information processing in judgment and decision-making processes (Slovic & Lichtenstein, 1971), deals with complex decision-making processes in which people decide which elements of information is important, compare information on each of the important elements, and decide which information elements to choose (Louviere, 1988). By using an experimental design to construct hypothetical alternatives, conjoint techniques allow for estimating the importance for each of the attributes (Bakken & Frazier, 2006; Green & Srinivasan, 1990).

Conjoint analysis stems from the idea that people make a decision based on its multiple conjointed attributes (Orme, 2010). Conjoint analysis techniques enable the researcher to quantify the relative underlying value that people consciously or unconsciously place on each attribute in the decision-making process (Hair et al., 2010). Conjoint analysis addresses information processing and complex decision making based on multiple factors. By using trade-off questions, respondents cannot say that each of the information combinations is equally important; rather, they are forced to choose the combination of situational information they find

most likely to offer discounts. Subsequently, the underlying importance of making a discount choice that managers placed on each piece of situational information would be determined.

In particular, the primary objective of this study was to determine the combination of situational information attributes that hotel managers prefer most when deciding on a discount choice. CBC experiments were used for this discrete choice modeling as CBC enables respondents to express preferences by choosing from sets of concepts, rather than by rating or ranking them.

$$P_{ni} = e^{\beta'_n X_{ni}} / \sum_j \beta'_n X_{nj} \quad (4)$$

where X_{ni} is the attribute levels of alternative *i* and individual *n*, and β denotes the part-worth utilities for the attribute levels. The parameter values of general interest are estimated through maximum likelihood methods. Some assumptions were made about the distribution of the errors in the model. The errors were assumed to be independent and to have identical variances. Given the independence of irrelevant alternatives, unobserved correlations between the choice alternatives should be checked before proceeding with the analysis (Bakken & Frazier, 2006).

The data were analyzed in several ways. First, the relative impact of each attribute level was assessed by counting "wins." In randomized CBC designs, each attribute level is equally likely to occur at each level of every other attribute. Therefore, the impact of each level is assessed by counting the proportion of times concepts including that level are chosen (Sawtooth, 2013).

Second, this model incorporates Hierarchical Bayes (HB) estimation, which develops

individual-level part-worth from choice data. Having individual-level estimates improves the accuracy of market simulations and leads to better understanding of the market structure and attribute importance than aggregate logit modeling. HB uses each individual's choices along with information about the distribution of part-worths for all respondents to estimate individual-level parameters.

Third, *t*-tests were used to investigate whether different institutions and human agencies have the same attitudes about the relative importance of situational information attributes. A *t*-test is a statistical test used to examine the differences in means between two groups on one or more variables (Hair et al., 2010). The common null hypothesis used for a *t*-test is that the mean score of one group is equal to the mean score of a second group, inferring that any difference between the attitudes of the two groups is due to some systematic influence other than chance (Hair et al., 2006; Zikmund, 2003). The alternative hypothesis posits that the two groups do not have equal means.

Expected results

As shown Table 5, in answering the first proposition, aggregated importance between information attributes was to be compared to determine whether managers treat some information attributes more heavily than others in making discount decisions. Managers use their own judgment when selecting information relevant to the institution, and they build their own habitual patterns that break down complex judgments into more manageable tactics. Therefore, different importance weights between situational information attributes—namely, booking window, occupancy rate, competitor's room rate, and potential for group cancellation—would be observed.

The second proposition concerns the levels of the booking window attribute. As the arrival date nears, managers have little time and resources to gather all information available and make analytic judgments, yet they have learned how to react to such conditions during their years in the industry. Changes in price are considered to be a quick fix. Given limited time and resources, managers would prefer making a discount choice rather than trying other pricing strategies. Using the descriptive analysis of average part-worths/utilities of each level within the booking window attribute, it was expected that the part-worth of the "7 days in advance" level of the booking window attribute would be higher than the part-worth for a different level of that attribute.

The third proposition deals with the levels of current performance attribute. Managers consider adjusting room rates as they encounter disequilibrium from forecasting. The lower current booking performs, the more likely managers are to choose to make a discount. Thus, it was expected that the part-worth of the "10% lower occupancy rate" level of the position of booking attribute would be higher than the part-worth for a different level of that attribute.

The fourth proposition is related to social pressure stemming from competitors' action. Hotel managers acknowledge that their performance levels are greatly influenced by the extent to which competitors make changes in pricing. Each hotel has premeditated pricing strategies and tries to keep up with the company's standards to avoid changes in discounting room rates. However, managers are expected to follow suit and make a discount choice if their competitors set their room rates lower than theirs. It was anticipated that the part-worth of the "$10 lower competitor's rate" level of the competitor's room rate attribute would be higher than the part-worth for a different level of that attribute.

The fifth proposition is related to external factors over which managers have little control. The nature of the lodging industry is dynamic, so managers persistently face uncertainty and shocks that require them to take an immediate, appropriate action in response. Managers make efforts to sell all rooms available, yet they occasionally encounter cancellations from group/contract bookings. Due to the nature of perishable products, the revenue the hotel could have generated from selling all rooms available is gone forever. Thus, managers would decide to offer discounted room rates when they anticipate cancellations from group/contract bookings. It was projected that the part-worth of the "anticipate cancellations from group/contract bookings" level of the external factor attribute would be higher than the part-worth for a different level of that attribute.

Two hypotheses were proposed based on aggregated part-worths of situational information attributes. The first hypothesis concerns the information attributes CBC experiment depending on the institution. The first null hypothesis asserts that no difference in average importance among different hotel institutions would be found. The null hypothesis cannot be rejected in all attributes (i.e., booking window, occupancy rate, competitor's room rate, and potential for group cancellation). If the null hypothesis for these attributes is rejected, the alternative hypothesis would be supported that managers place significantly different importance on information attributes depending on different hotel structures.

The second hypothesis is related to the impact of human agency on the discounting decision-making process. The second null hypothesis claims that no difference in average importance exists between different human agencies. The null hypothesis cannot be rejected in all attributes (i.e., booking window, occupancy rate, competitor's room rate, and potential for

group cancellation). If the null hypothesis is rejected, the alternative hypothesis will be supported: Managers place significantly different importance on information attributes depending on different management expertise and experience.

Table 5. Research questions and predictions

Research Questions	**Prediction**	**Tools**	**Survey Items**
Proposition 1: Managers treat some information attributes more heavily than others in making discount decisions.	Different utilities between aggregated attributes	Descriptive Analysis	Utilities from conjoint scenarios (CQ1-14)
Proposition 2: The part-worth of “7 days in advance” level of the booking window attribute is higher than the part-worth for a different level of that attribute.	Utility of "7 days in advance" is higher than others		
Proposition 3: The part-worth of “10% lower occupancy rate” level of the position of booking attribute is higher than the part-worth for a different level of that attribute.	Utility of "10% lower occ%" is higher than others		
Proposition 4: The part-worth of “$10 lower competitor’s rate” level of the competitor’s room rate attribute is not significantly higher than the part-worth for a different level of that attribute.	Utility of $10 less a competitor's rate is higher than others		
Proposition 5: The part-worth of "anticipate cancelations from group/contract bookings" level of the external factor attribute is higher than the part-worth for a different level of that attribute.	Utility of "anticipate cancelations from group/corporate bookings" is higher than the other		
Ho: Managers do not place significantly different importance on information attributes depending on different hotel structures. H1: Managers place significantly different importance on information attributes depending on different hotel structures.	Different average importance of each attribute across different size and ownership structures	t-test	Utilities from conjoint scenarios (CQ1-14) cluster (Q1-9)
Ho: Managers do not place significantly different importance on information attributes depending on different management expertise and experience. H2: Managers place significantly different importance on information attributes depending on different management expertise and experience.	Different average importance of each attribute across managers' education and experience groups	t-test	Utilities from conjoint scenarios (CQ1-14)cluster (Q10-15)

CHAPTER FOUR: FINDINGS

Introduction

The objective of this study was to understand which situational information attributes are most relevant in discount decisions and how situational information attributes differ among different institutions and human agencies in the lodging context. Using conjoint analysis on a data set gathered from hotel properties located in the United States, these situational information attributes were compared in order to determine if and to what extent the importance of attributes varies across institutional factors and human agency. A full replication of these levels would have necessitated the creation of 90 scenarios: booking window (3) x occupancy rate (3) x competitor's room rate (5) x external factor (2). An orthogonal array was developed for the four attributes that required only 14 scenarios (Addelman, 1962). This chapter discusses the data collection, data preparation, and reliability and validity testing before proceeding with the data analysis. Descriptive results revealed the respondents' profile and characteristics of the hotels. Importance scores on information attributes resulting from conjoint analyses will be discussed. Next, institutions and human agencies will be clustered into distinct groups using several cluster procedures. Propositions and hypotheses testing as well as *t*-tests will follow.

Data collection

The survey consisted of three sections. The first section of the survey included 14 scenarios. Respondents were asked to assume that they were observing booking changes in their properties for transient demand. In each scenario, participants were shown four tasks, each of which included four situations extending to booking window, occupancy rate, competitor's room

rate, and external factor. They were asked to choose one task that described the situation in which they were most likely to make a discount decision. The second part of the survey consisted of information about hotel such, as the size of the firm, operation structure, total room inventory, and location. Respondents were also asked to self-evaluate their competitiveness in terms of rooms, food and beverage, and others. The third part of the survey asked information about human agency, such as respondents' job title, experience, education, and gender (see Appendix E).

The conjoint scenarios were built using Sawtooth software. The online questionnaire was distributed and collected through Qualtrics. Detailed instructions were given to the respondents that included a thorough description of each attribute. The target population for this study was hotel managers directly involved in making pricing decisions within a hotel located in the United States. Each hotel self-identified the participants based on the criterion of the researcher, who initially approached 24 managers using personal networks. Once these managers completed the online conjoint survey, they were asked to refer their colleagues who might be interested in participating in the conjoint survey. Four managers volunteered to facilitate the data collection process by sharing their personal and business contacts of potential participants in the survey. These four managers directly sent out emails with the online survey attached to their contacts and asked for collaboration and assistance. This snowballing process proceeded until the researcher exhausted all resources. The data collection began in October and ended in December 2013.

Ultimately, 117 complete surveys were collected. The total sample included 55 managers from hotels located in Florida (47.8%), Texas (7.8%), Louisiana (5.2%), and Washington (5.2%), as shown in Table 6.

Table 6. Sample hotels by state

	Frequency	Percent
FL	55	47.8%
TX	9	7.8%
LA	6	5.2%
WA	6	5.2%
IL	5	4.3%
NY	5	4.3%
CA	4	3.5%
GA	4	3.5%
NV	4	3.5%
OH	3	2.6%
MA	2	1.7%
TN	2	1.7%
Other	10	8.7%
Total	115	100.0%

As the majority of the sample came from Florida, *t*-tests were conducted before proceeding with the data analysis to examine whether combining the sample from Florida and other states was appropriate. The findings are presented in Tables 7 and 8. Based on the chi-square and *t*-test results, the decision was made that the two groups do not differ significantly; thus, their data were pooled for further data analysis.

Table 7. Chi-Square of hotel characteristic of sample by state

		State		Chi-Square
		FL	Other	
Operation	Non-Franchise	11	11	0.820
	Franchise	44	49	
OCC	< 60%	15	8	0.229
	61-70%	6	11	
	71-80%	18	24	
	> 81%	16	16	
ADR	$100 or less	11	5	0.049*
	$101-$140	19	14	
	$141-$180	11	22	
	$181 or higher	12	19	
Hotel type	Leisure	41	44	0.882
	Business	14	16	
Location	Very close to the main attraction	16	20	0.235
	Close to a main attraction	6	10	
	Distant to a main attraction	26	18	

Note: *$p < .05$.

Table 8. Differences among hotel characteristic of sample by state

	State	Mean	SD	t	Sig.
Rooms	FL	408.9	426.6	-1.705	.091
	Other	573.4	581.7		
Room Rev (%)	FL	71.5	11.8	-.040	.968
	Other	71.6	11.6		
F& B Rev (%)	FL	21.8	10.5	1.193	.235
	Other	19.6	9.9		
Other Rev (%)	FL	6.7	4.4	-2.081	.040
	Other	8.9	6.5		
Leisure (%)	FL	57.2	24.2	-.381	.704
	Other	58.8	22.9		
Business (%)	FL	24.8	19.3	-.083	.934
	Other	25.0	13.0		
Groups (%)	FL	18.1	17.6	.576	.566
	Other	16.1	18.2		

Data preparation

After data were collected, they were coded and entered into SPSS version 20.0. First, the data were screened to detect any deviations from normality. Next, missing data and outliers were checked. Participants were required to complete all conjoint scenarios; any missing and incomplete values resulted in exclusion from the data analysis. Significant outliers were not detected.

Minor adjustments were made with regard to the number of total room inventory in the region. The respondents were asked to report the total inventory in the region as well as the number of rooms in their hotels. The competitive set was defined by the respondents as they self-identified the number of total room inventory of their competitors. However, in four cases, respondents reported fewer total numbers of inventories than rooms. After consulting with an academic expert and an industry expert, it was concluded that the respondents mistakenly missed inserting an extra "0," so adjustments were made.

Finally, prior to conducting *t*-tests of importance scores, a scatter plot of the residuals was employed as well as formal testing to verify that the assumption of normality was met. The results of the Kolmogorov-Smirnov statistic revealed the normality of the distribution of scores. An inspection of the normal probability plots was then made. The observed value for each score was plotted against the expected value from the normal distribution. Reasonably straight lines suggested a normal distribution. Therefore, the distribution of average importance was reasonably normal (see Appendix F).

Reliability and validity

A pilot study was conducted with five academic and two industry experts to check for face validity before implementing the final survey. Each participant was asked to complete the questionnaire and provide comments regarding the clarity and comprehensibility of the questions. A pilot study was suggested to ensure face validity and reduce measurement error (Dillman et al., 2009). Any problems with the questionnaire design as well as grammatical or spelling errors can turn away potential respondents, resulting in a low response rate (Dillman et al., 2009). Poor question design could also affect measurement error. Implementation procedures were also tested to ensure that the survey built in Qualtrics was randomly distributed, thereby generating even numbers of data collection in each seed.

For internal consistency reliability, the split-half method was used. Respondents were randomly divided into half, and logit estimation was done separately for each half. The entire test was administered to a group of individuals, and the total score for each subset was computed; the split-half reliability was obtained by determining the correlation between the two total subsets of scores. The reliability of each solution was measured by the squared correlation coefficient computed across its attribute levels (see Appendix G). The value of r^2 is often interpreted as the percentage of the variance in either set of estimates, which is accounted for by the other; thus, 100 times one minus r^2 can be interpreted as a relative percentage error (Johnson & Orme, 1996). The results supported the overall internal consistency reliability.

Descriptive statistics

Profile of respondents

A total of 117 participants completed the task. The profile of the sample is reported in Table 9. The gender of the sample was evenly distributed, with 54% of the respondents being male and 46% being female. Age distribution of the respondents was as follows: 26% were 34 years old or younger; 31% were 35 to 44 years old; 30% were 45 to 54 years old; and 13% were 55 years old or older. Approximately 62% of the respondents had a bachelor's degree, and 17% had a master's or doctoral degree; 15% had some college experience.

Table 9. Demographic profile of sample

	#	%
Gender		
Male	62	54%
Female	52	46%
Age		
34 years or younger	30	26%
35-44 years old	36	31%
45-54 years old	35	30%
55 years or older	15	13%
Education		
High school	8	7%
Some college	17	15%
College graduate	72	62%
Graduate degree	20	17%

With regard to work profile, 32% of respondents worked in a revenue management department, 24% were a general manager/assistant general manager, 22% were in sales/marketing (22%), and 21% were in rooms division. Respondents had held their current job title from 1 to 5 years (44%), 6 to 10 years (31%), more than 11 years (18%), and less than a year

(3%). Half of the respondents had worked in the lodging industry for more than 10 years: 37% had industry tenure of more than 16 years, followed by 6 to 10 years (28%), and 11 to 15 years (21%).

Table 10. Work profile of sample

	#	%
Department		
GM/AGM	28	24%
Revenue Management	38	32%
Sales/Marketing	26	22%
Rooms Division	25	21%
Job Tenure		
Less than 1 year	8	7%
1-5 years	51	44%
6-10 years	36	31%
11-15 years	11	9%
More than 16 years	11	9%
Industry Tenure		
Less than 1 year	3	3%
1-5 years	13	11%
6-10 years	33	28%
11-15 years	25	21%
More than 16 years	43	37%

Descriptive analysis of survey items

Hotel institution profiles were broken down by size, competitive market share, brand affiliation, average occupancy rate (OCC), average daily room rate (ADR), segmentation, and location. The final sample consisted of the number of rooms, ranging from 25 to 30,000. Based on the distribution of number of rooms, the size of the hotel was regrouped into four categories to simplify the data analysis and interpretation. Hotel size was thus categorized as having fewer

than 199 rooms (30%), between 200 and 299 rooms (24%), between 300 and 699 rooms (25%), and more than 700 rooms (20%).

Market share was determined using each hotel's number of rooms and total competitive inventory. Total inventory ranges from 108 to 30,000 rooms. Market share was calculated as follows:

$$Market\ share = \left(\frac{Number\ of\ rooms}{Total\ room\ inventory}\right) * 100 \quad (5)$$

According to MKG Consulting (2002), the market share accounted for by the top three hotel brands amounts to only 15%,indicating that the industry is very competitive; thus, companies are increasingly paying more attention to how their competitors position their products to achieve better performance (Brown & Dev, 2000). A cut-off of 15% was used to determine the extent of rivalry. Only 20% of hotels in the sample were considered to be highly competitive in the industry as their rooms accounted for less than 15% of the total inventory in the area.

In addition, 81% of hotels were affiliated with a brand or chain compared to 20% run independently. In terms of average occupancy rate, 37% of hotels' OCC ranged between 71% and 80%, followed by higher than 81% (28%), less than 60% (20%), and 61% to 70% (15%). For ADR, 30% of the hotels reported an ADR of $101 to $140, followed by $141 to $180 (29%), $181 or higher (28%), and $100 or less (14%).

The survey was not deliberately sent to hotels where the main source of revenue is not from selling rooms. For example, casino hotels were not invited to participate in the survey as they focus more on generating revenue from casino floors (Norman & Mayer, 1997). To validate

this procedure, hotels were asked to report their share of revenue. The respondents reported that, on average, 71% of revenue comes from selling rooms, which met the researcher's criterion.

In addition, the share of reservation was identified. Six out of ten reservations were made by the leisure market whereas the remaining reservations were from the business and groups/contracts markets. Eighty cases fell into the groups/contracts reservations. The reservation share is often grouped between leisure and business (Jauncey et al., 1995; Relihan, 1989). After consulting with one academic and one industry expert, the reservation share of groups/contracts was repositioned to either leisure market or business market for better interpretation. Academic and industry experts helped relocate the share of groups/contracts. Most group/contract reservations are made through the business market (e.g. corporate, association, or government) rather than the leisure market (e.g. social, military, education, religious, or fraternal). Based on the experts' comments, 75% of groups/contracts were combined with the business market and 25% with the leisure market. As a result, 74% of hotels were categorized as leisure hotels as more than half of their reservations come from the leisure market.

With regard to location, four out of every ten hotels were located far from the main attraction, whereas 37% of hotels were located in very close proximity to the main attraction. Tables 11 and 12 encompass more details of the sample's institutional profiles.

Table 11. Institution profile of sample

	Frequency	Percent
Hotel Size		
< 199 rooms	35	30%
200-299 rooms	28	24%
300-699 rooms	29	25%
> 700 rooms	23	20%
Competitive market share		
1-25%	63	57%
26-50%	16	15%
51-75%	12	11%
76-100%	19	17%
Structure		
Independent/Non-Franchise	22	19%
Franchise	95	81%
OCC		
< 60%	23	20%
61-70%	17	15%
71-80%	43	37%
> 81%	33	28%
ADR		
$100 or less	16	14%
$101-$140	34	30%
$141-$180	33	29%
$181 or higher	32	28%
Hotel Segmentation		
Leisure	87	74%
Business	30	26%
Location		
Very close to the main attraction	36	37%
Close to the main attraction	17	18%
Distant to the main attraction	44	45%

Table 12. Institution information

	Min	Max	M	SD
Rooms	25	3,000	498.5	517.2
Total Inventory	108	30,000	2465.9	4140.2
Revenue Share (%)				
Room Revenue	30	100	71.3	11.7
F&B Revenue	0	48	20.8	10.3
Other Revenue	0	30	7.9	5.7
Reservation share (%)				
Leisure	0	100	58.1	23.4
Business	0	85	24.6	16.3
Groups/contracts	0	80	17.3	18.0

Table 13 summarizes hotel competitiveness. The respondents were asked to self-evaluate their competitiveness levels based on rooms (e.g., quality, price, and amenity), food (e.g., quality, price, and variety of menu items), and others (e.g., facilities and meeting space). The competitiveness items were adapted from previous literature and were modified based on the comments acquired during the interviews with hotel managers. Seven-point Likert scales were used. The binary scales for the questions about the room or food quality and facilities and meeting space were anchored at 1 (worse) and 7 (better). The scales for questions related to price were anchored at 1 (expensive) and 7 (affordable). The scales for room amenities and variety of menu items were anchored at 1 (fewer) and 7 (more).

Overall, the respondents shared higher competitiveness scores. The respondents considered their rooms to be better than those of their competitors ($M_{Quality}$ = 5.68; M_{Price} = 5.66; $M_{Amenity}$ = 5.69). The standard deviation ranged from 1.10 to 1.24 for room competitiveness. In terms of food competitiveness, the respondents self-evaluated their food as

being better than that of competitors ($M_{Quality}$ = 5.78; M_{Price} = 5.58; $M_{Amenity}$ = 5.59). The standard deviation ranged from 1.17 to 1.21 for food competitiveness.

Moreover, the respondents evaluated their competitiveness in terms of facilities (e.g., pool, spa) and meeting space. The competitive score of facilities was high, with a mean score of 5.70 and standard deviation of 1.18, whereas the competitive score of meeting space was relatively lower, with a mean score of 5.34 and standard deviation of 1.44. This indicated that some hotels do not have meeting spaces and, thus, are less competitive compared to their competitors.

To provide an indication of the average correlation among all of the items in the competitiveness items, reliability for competitiveness was assessed using Cronbach's alpha. With alpha values ranging from 0 to 1, higher values indicated greater reliability; a minimum level of 0.7 is recommended (Hair et al., 2006; Nunnally, 1978; Pallant, 2007; Zikmund, 2003). The results of the reliability analysis showed that the questionnaire items on competitiveness were internally reliable (α = 0.933).

Table 13. Hotel competitiveness

	Min	Max	M	SD
Room Quality	1	7	5.68	1.24
Room Price	3	7	5.66	1.10
Room Amenity	2	7	5.69	1.17
Food Quality	1	7	5.78	1.15
Food Price	1	7	5.58	1.21
Variety of Menu items	1	7	5.59	1.17
Facilities	2	7	5.70	1.18
Meeting Space	1	7	5.34	1.44

Note: Competitiveness was self-evaluated based on a 7-point Likert scale (α= .933).

Hypotheses testing

Results of conjoint analysis

A conjoint analysis (Green & Srinivasan, 1990; Green & Wind, 1975) develops measures of utility that represent the importance of the various levels of the four situational information attributes (i.e., booking window, occupancy rate, competitors' room rate, and potential for cancellation). Through the conjoint program, the situation features were varied to build many situation concepts, and the situation features served as independent variables. Respondents were asked to rate these situation concepts; their choice became a dependent variable. Based on the respondents' evaluations of the situation concepts, the extent to which each of the features added much unique utility was determined. In a similar manner to regression, the researcher regressed a dependent variable on independent variables; betas were equivalent to part-worth utilities.

The average importance of an attribute represents how important it was to respondents in making their discount choices (Table 14). When indicating their preferences for the situations presented in the survey, the respondents placed an average of 33.24% importance on the booking window (7 days, 30 days, or 30 days in advance). Competitors' room rates ($10 higher, $5 higher, same, $5 lower, or $10 lower compared to respondents' rates) with an average importance of 23.94%, and an exogenous factor, whether the hotel anticipates cancellations or not, with an average importance of 21.98%, appeared to be of moderate importance to respondents. The least valued attribute in the discount choice process was their own hotels' current occupancy rate (same, 5% lower, or 10% lower in comparison to previous year), at 20.84%.

Table 14. Average attribute importance

	Average Importance	SD
Booking Window	33.24	16.94
Competitor's Room Rate	23.94	12.93
Potential for cancelation	21.98	14.68
Occupancy rate	20.84	11.27

A part-worth utility—a measure of relative desirability or worth—provides further insights into respondents' choices, with higher utility indicating being more desirable to respondents' selection (Orme, 2010). Part-worth utilities for each of level of the four situation sets were derived from the actual choices the respondents made on the survey. The levels of each attribute have a measure of utility, and the sum of these represents a total measure of utility for the attributes. Raw utilities for each level were zero-centered so that the difference between the best and worst levels is 100 points. Within each attribute, the utility values sum to 0. The measure for some levels would contribute more than others to a total utility for the attributes. If one level contributes more than another does to a total utility, that level is considered more important than the other level.

Negative utility values point toward the level that is less important than others as the respondents assigned a choice of "1" to the best hypothetical task and "0" to the worst. Thus, the attribute levels with negative part-worth utilities indicate that they are less desirable than the other levels of the same attribute (Orme, 2010). For example, respondents could make a discount choice under the conditions of "60 days in advance," "same occupancy rate," "$10 higher competitor's rate," and "no potential for cancellation." However, all else being equal, the

conditions of “7 days in advance,” “10% lower occupancy rate,” “$10 lower competitor’s rate,” and “potential for cancellation” levels would be preferred more.

Average attribute part-worth utilities for all levels of each attribute are shown in Table 15. First, in the booking window attribute, the measure for the “7 days in advance” level contributed more to the total utility (42.30) than other levels, indicating that this level is a more preferred condition than the others when making a discount choice. The utility for the “60 days in advance” level was negative (-47.31), showing that it is a less preferred condition than others of the same attribute. As projected, the shorter the booking window was, the more managers chose to make a discount choice.

Second, the “competitor’s rate is $10 lower than yours” level had the highest utility score (32.74) compared to other levels in the competitor’s room rate attribute, indicating that it made a greater contribution to the total utility of the competitor’s room rate attribute. The utility for the “competitor’s room rate is $10 higher than yours” level was negative (-36.99). Thus, respondents were least likely to make a discount choice when they saw that their competitor’s room rate was $10 higher than theirs. As expected, the lower the competitors set their rates, the more managers chose to make a discount choice.

Third, in the potential for cancellation attribute, the utility for the “anticipate cancellations” level contributed more (30.97) to the total utility than the one for “do not anticipate cancelations” (-30.97). Thus, the latter level is considered to be a less preferable condition when making a discount choice. As anticipated, the part-worth of the “anticipate cancellations” level of the external factor attribute was higher than the part-worth for a different level of that attribute.

Finally, the utility for the “10% lower than last year” level contributed more (32.73) to the total utility of occupancy rate attribute than other levels. Thus, this level played a more important role than the other levels when making a discount choice. The utility for “your occupancy rate is the same as last year” level was negative (-35.75),meaning respondents considered it to be a less preferable condition when making a discount choice than other levels of the same attribute. Lower occupancy levels had higher utility values than the higher occupancy rate did. The lower the current occupancy rate compared to the previous year, the more managers chose to make a discount choice.

Table 15. Average utilities (Zero-Centered Diffs)

		Average Utilities	SD
Booking Window	7 days	42.3	63.66
	30 days	5.01	19.44
	60 days	-47.31	54.76
Competitor's Room Rate	$10 Higher	-36.99	44.99
	$5 Higher	-20.18	31.78
	Same	1.59	19.67
	$5 Lower	22.84	33.19
	$10 Lower	32.74	27.62
Potential for Cancelation	No	-30.97	42.94
	Yes	30.97	42.94
Occupancy rate	Same	-35.75	36.95
	5% Lower	3.02	18.27
	10% Lower	32.73	27.68

Note: Attribute utility difference equals sum of each level utility difference.

Overall attribute level utilities

The part-worth utilities were estimated on an interval scale, so the part-worth utility value of one attribute cannot be compared to that of another attribute. Hence, individual utilities were transformed to standardized ratio to determine different importance scores between levels within each attribute.

In the booking window attribute, the average utility of "7 days in advance" was larger (41%) than "60 days in advance" (34%) and "30 days in advance" (24%), showing that hotel managers would most likely consider making a discount choice in the short run. In addition, larger average utilities of "$10 lower" (24%) and "$5 lower" (23%) in the competitor's room rate attribute showed that hotel managers are deliberately expected to make a discount choice when they see their competitors' rates being $5 or $10 lower than their room.

In the potential for cancellation attribute, the average utility of "potential for cancellation" (59%) was larger than "no potential for cancellation" (41%). The results indicated that managers' assessment of the external environment such as weather, flight cancelations, or any other reasons that prevent guests to arrive on time lead managers to make a discount choice. In terms of occupancy rate, the average utility of "10% lower" was larger (40%) than "same" and "5% lower". In other words, hotel managers would be more likely make a discount choice when their occupancy rate is 10% lower than the previous year (Table 16).

Table 16. Level utilities (Standardized ratio)

		Mean	SD
Booking Window	7 days	41%	0.12
	30 days	34%	0.04
	60 days	24%	0.10
Competitor's Room Rate	$10 Higher	16%	0.05
	$5 Higher	18%	0.04
	Same	20%	0.02
	$5 Lower	23%	0.04
	$10 Lower	24%	0.03
Potential for Cancelation	No	41%	0.12
	Yes	59%	0.12
Occupancy rate	Same	27%	0.07
	5% Lower	34%	0.03
	10% Lower	40%	0.05

Clusters by hotel institution

The first hypothesis was related to an institution's average importance of situational information attributes. It was proposed that, depending on hotel institution, managers place significantly different importance on information attributes. To better determine different hotel segments, a two-stage cluster analysis was applied: hierarchical and *k*-means clustering.

First, the hierarchical agglomerative method was considered exploratory and used as a preliminary step to determine the number of naturally occurring clusters that might exist in the data. Each cluster should be as different as possible between clusters, but as similar as possible within clusters. The hierarchical method begins each observation as an individual cluster, then calculates the distance between all observations and clusters the two observations that have the smallest distance between them. Once these two observations become one cluster, the process

starts all over again; this iterative process continues until each observation is in one all-inclusive cluster (Bruce, Nitin, & Galit, 2007).

Second, *k*-means clustering was applied to the data as a confirmatory manner. *K*-means clustering requires the number of clusters as initial input. Then the algorithm begins with an initial partition of the data into this pre-specified number of clusters. The algorithm continues by moving observations to new clusters until the sum of the distances of each observation from its cluster is reduced from the initial sum of distances. This last step continues until a very small sum of distances is reached (Bruce et al., 2007).

Through hierarchical agglomerative and *k*-means cluster procedures, hotels were segmented into two clusters: *Road Warriors* (cluster 1) and *Stars in the Universe* (cluster 2).

Cluster 1 (29.9% of the whole sample) consisted of smaller hotels and a combination of both non-franchised and franchised hotels. The majority of the hotels in this segment had fewer than 199 rooms (63%). Cluster 1 included both franchised (74%) and non-franchised (26%) hotels. This segment contained monopolistic hotels having more than 50% of the market share (77%). Half of the hotels had less than 60% OCC, and 74% of the hotels had ADR of $140 or lower. Furthermore, these hotels greatly focused on the leisure market (86%), compared to the other segment. Lastly, the locations of these hotels were far from the main attractions (91%).

As the function that discriminates between two clusters of institutions, hotel size and market share were identified, suggesting a label for each cluster based on size and market share (see Appendix I). Cluster 1 was labeled *Road Warriors.* Hotels in *Road Warriors* are smaller in size, but face less competition. These hotels have a lower occupancy rate, mainly targeting the leisure market, but they seem to perform well due to the reduced competition. Less competition

exists because the regional area does not serve as a main attraction. These hotels are not located near major attractions, but appear to fill the need of leisure travelers who are possibly passing through the area.

As presented in Table 17, cluster 2 (45.3% of the whole sample) had the following main features: comprised mostly of larger and franchised hotels; had relatively more rooms than the other segment (42% had 300–699 rooms and 30% had more than 700 rooms); and most hotels were franchised (92%). In addition, this segment had a smaller market share, which means that total room inventory is high in the region and, thus, highly competitive; indeed, 68% of the hotels had a market share of less than 25%. Moreover, hotels in this segment performed better than in the other segment: Nine out of every ten hotels reported a 71% OCC or higher and 51% of the hotels had ADR of $181 or higher. These hotels target not only the leisure market (60%), but also the business market (40%). In terms of location, these hotels were closely located to the main attractions (75%).

Hotels in cluster 2 were labeled the *Stars in the Universe.* Hotels in *Stars in the Universe* were larger in size, affiliated with chains/brands, and had a mix of leisure and business reservations. These hotels were located near the main attractions (e.g., beach, downtown, or convention center), and both leisure and business travelers appeared to be attracted to stay in them. Although hotels in *Stars in the Universe* enjoyed great performances, more competitors existed in the market due to the large demand and great location.

Table 17. Hotel Clusters

		Road Warriors (n=35)		*Stars in the Universe* (n=53)	
		#	%	#	%
Hotel Size	less than 199 rooms	22	63%	6	11%
	200-299 rooms	12	34%	9	17%
	300-699 rooms	1	3%	22	42%
	more than 700 rooms	0	0%	16	30%
Market Share	1-25%	5	14%	36	68%
	26-50%	3	9%	10	19%
	51-75%	9	26%	1	2%
	76-100%	18	51%	6	11%
Operation Structure	Non-Franchise	9	26%	4	8%
	Franchise	26	74%	49	92%
OCC	< 60%	19	54%	0	0%
	61-70%	11	31%	5	9%
	71-80%	4	11%	21	40%
	> 81%	1	3%	27	51%
ADR	$100 or less	8	23%	6	11%
	$101-$140	18	51%	8	15%
	$141-$180	9	26%	15	28%
	$181 or higher	0	0%	24	45%
Target Market	Leisure	30	86%	32	60%
	Business	5	14%	21	40%
Location	Very close to the main attraction	1	3%	32	60%
	Close to the main attraction	2	6%	13	25%
	Distant to the main attraction	32	91%	8	15%

Validations

To validate the two-cluster segmentation, two different methods were employed: (1) crosstabs analyses and Pearson chi-square tests and (2) discriminant analyses. Statistical significance tests using the chi-square enable the researcher to see how well the function separates the groups. Chi-square tests indicated that the hotel segmentation made significant

distinctions between *Road Warriors* and *Stars in the Universe* (Size: $X^2 = 42.857$, $p < .001$; Market Share: $X^2 = 42.751$, $p < .001$; Operation Structure: $X^2 = 5.526$, $p < .05$; OCC: $X^2 = 55.597$, $p < .001$; ADR: $X^2 = 27.083$, $p < .001$; Market Segment: $X^2 = 6.501$, $p < .05$; Location: $X^2 = 49.998$, $p < .001$) (see Appendix H).

Discriminant analysis was employed to examine whether any significant differences emerged between groups on each of the independent variables using the group means. This procedure indicates which attributes contribute most to group separation. A distinguishing group membership was significantly supported as follows: First, large mean differences between *Road Warriors* and *Stars in the Universe* suggested that these might be good discriminators. Second, tests of the equality of group means provided strong statistical evidence of significant differences between the means of *Road Warriors* and *Stars in the Universe* for all independent variables, including OCC and location, producing very high *F* values. Third, Box's M tested the null hypothesis that the covariance matrices do not differ between groups formed by the dependent. Box's M tests should be non-significant, and the log determinants should be equal. In this case, the log determinants appeared similar, and Box's M was significant. However, with large samples, a significant result of Box's M is not regarded as too important (Hair et al., 2010). Fourth, a canonical correlation of .911 suggested that the model explains 98.2% of the variation in the grouping variable. Finally, Wilks' lambda indicated the significance of the discriminant function. A highly significant function was observed, with 17% of total variability not being explained.

In particular, the discriminant coefficients indicated the importance of each predictor. The OCC score was the strongest predictor, followed by hotel size. These two variables, with

large coefficients, stand out as they strongly predict the allocation of cases to *Road Warriors* or *Stars in the Universe*. Operation structure and market segment were less successful as predictors (see Appendix I for details). It was concluded that the two-hotel-institution cluster segmentation was significantly validated.

Average Importance Mean differences

Several *t*-tests were conducted to examine the difference among the four information attributes between *Road Warriors* (CL1) and *Stars in the Universe* (CL2). Statistically significant differences in average importance were found between *Road Warriors* and *Stars in the Universe* (see Table 18). The findings suggest that *Road Warriors* and *Stars in the Universe* place significantly different importance scores on the information attributes in the discounting decision-making process. Compared to *Stars in the Universe*, *Road Warriors*'s discount choice was more likely to be influenced by booking window (M_{RW} = 40.64 vs. M_{SU} = 29.81) and potential for cancellation (M_{RW} = 26.12 vs. M_{SU} = 17.08). Moreover, *Stars in the Universe*'s discount choice was more likely to be influenced by booking window (M_{RW} = 40.64 vs. M_{SU} = 29.81) and competitor's rate (M_{RW} = 19.10 vs. M_{SU} = 27.79).

Table 18. Average importance by hotel clusters

	Road Warriors (n=35)		*Stars in the Universe* (n=53)		t	Sig.
	M	SD	M	SD		
Booking Window	40.64	18.25	29.81	15.1	3.029	0.003*
Potential Cancelation	26.12	16.21	17.08	10.74	3.148	0.002*
Competitor's Rate	19.1	12.7	27.79	11.98	-3.251	0.002*
Occupancy Rate	14.14	8.79	25.32	10.84	-5.095	0.000**

Note: *$p < .05$; ** $p < .001$.

Then individual utilities were converted to standardized ratio in effort to see different importance scores of levels within each attribute between hotel clusters. As shown in Table 19, the results revealed that significant different level utilities existed between *Road Warriors* and *Stars in the Universe*. *Road Warriors* regarded "7 days in advance" as more important in discount choice than *Stars in the Universe* did (M_{RW} = 48% vs. M_{SU} = 38%, $p < .001$). *Stars in the Universe* considered offering a discount choice more in advance than *Road Warriors* did (M_{RW} = 18% vs. M_{SU} = 27%, $p < .001$).

Stars in the Universe were more likely to take precaution by offering a discount choice as they saw their competitors charge $5 lower than their rooms, compared to *Road Warriors* did (M_{RW} = 21% vs. M_{SU} = 24%, $p < .001$). Moreover, *Road Warriors* were more likely to consider making a discount choice even if their occupancy rate remains same from the previous year than *Stars in the Universe* did (M_{RW} = 30% vs. M_{SU} = 24%, $p < .001$).

Table 19. Individual level utilities by hotel clusters

		Mean		t	Sig.
		Road Warriors	*Stars in the Universe*		
Booking Window	7 days	48%	38%	16.67	0.00***
	30 days	33%	35%	3.07	0.08*
	60 days	18%	27%	17.71	0.00***
Competitor's Room Rate	$10 Higher	18%	14%	9.99	0.00***
	$5 Higher	18%	17%	2.33	0.13
	Same	20%	20%	0.41	0.52
	$5 Lower	21%	24%	14.24	0.00***
	$10 Lower	23%	24%	3.85	0.05*
Potential for Cancelation	No	39%	42%	1.27	0.26
	Yes	61%	58%	1.27	0.26
Occupancy rate	Same	30%	24%	19.39	0.00***
	5% Lower	33%	35%	6.38	0.01**
	10% Lower	37%	41%	16.69	0.00***

Note: *$p < .10$; ** $p < .05$; ** $p < .001$.

Clusters by human agency

The second hypothesis concerned the impact of human agency on the discounting decision-making process. It was claimed that managers place significantly different importance on information attributes, depending on different management expertise and experience.

Hierarchical and *k*-means cluster procedures were employed to classify hotel managers into two groups: *Market Movers* (cluster 1) and *Entourage* (cluster 2). Cluster 1 (50.4% of the whole sample) consisted of general managers/assistant general managers (42%) and revenue managers (44%). This segment included managers who have worked in their current position for more than 16 years (19%). In terms of industry tenure, most managers in this segment have

worked in the lodging industry more than 10 years (91%). Cluster 1 included more male than female managers. The age distribution appeared older than the other segment, with 73% of the managers being 45 years old or older. These managers were also highly educated as 63% were college graduates and 25% had a graduate degree.

Industry tenure and age were identified as playing a major role that discriminates between two clusters of human agencies (see Appendix K). Labeling each cluster based on industry tenure and age was thus suggested. Cluster 1 was labeled *Market Movers* because this group of managers was more experienced and older. They were either general managers, assistant general managers, or revenue managers. These managers have gained knowledge and know-how during their extended experience in the industry. These managers were considered to be those who move the market.

Cluster 2 included managers from sales/marketing (39%) and rooms division/front desk (41%). This segment had relatively shorter job tenure compared to the other segment, with only 65% of managers having worked in their current position from 1 to 5 years. Most managers had worked in the lodging industry for fewer than 10 years (82%). In addition, this segment had more females than males, and the age distribution was skewed toward the younger generation, as 54% were 34 years old or younger. Moreover, managers in this segment were less educated compared to the other segment, as three out of every 10 managers did not have a college degree (Table 20).

Managers in cluster 2 were labeled *Entourage* as they were younger and less experienced. They tend to follow and attend to the industry leaders. These novices lack experience and tend to make unstable judgment and throw odd balls, which can lead to harmful consequences in their institutions and the industry.

Table 20. Human agency clusters

		Market Movers (n=59)		*Entourage* (n=54)	
		#	%	#	%
Department	GM/AGM	25	42%	2	4%
	Revenue Management	26	44%	9	17%
	Sales/Marketing	5	8%	21	39%
	Rooms Division	3	5%	22	41%
Job Tenure	Less than 1 year	1	2%	7	13%
	1-5 years	15	25%	35	65%
	6-10 years	23	39%	12	22%
	11-15 years	9	15%	0	0%
	More than 16 years	11	19%	0	0%
Industry Tenure	Less than 1 year	0	0%	3	6%
	1-5 years	0	0%	13	24%
	6-10 years	5	8%	28	52%
	11-15 years	13	22%	9	17%
	More than 16 years	41	69%	1	2%
Gender	Male	35	59%	26	48%
	Female	24	41%	28	52%
Age	34 years old or younger	1	2%	29	54%
	35-44 years old	15	25%	20	37%
	45-54 years old	30	51%	5	9%
	55 years or older	13	22%	0	0%
Education	High school	2	3%	6	11%
	Some college	5	8%	12	22%
	College graduate	37	63%	32	59%
	Graduate degree	15	25%	4	7%

Validations

Crosstabs and Pearson chi-square tests as well as a discriminant analysis were applied to validate the two-human-agency cluster segmentation. Chi-square tests showed that the human agency clustering function significantly separates *Market Movers* from *Entourage* (Department: $X^2 = 52.016$, $p < .001$; Job Tenure: $X^2 = 35.806$, $p < .001$; Industry Tenure: $X^2 = 70.770$, $p < .001$;

Gender: $X^2 = 1.417$, $p > .001$; Age: $X^2 = 57.596$, $p < .001$; Education: $X^2 = 11.414$, $p < .05$) (see Appendix J).

Any significant differences between groups on each of the independent variables were assessed using discriminant analysis. Large mean differences between *Market Movers* and *Entourage* suggested good discriminators. Strong statistical evidence of significant differences between means of *Market Movers* and *Entourage* were found for all independent variables except gender. Furthermore, a canonical correlation of .854 suggested that the model explains 72.9% of the variation in the grouping variable. Wilks' lambda indicated the significance of the discriminant function. In particular, the discriminant coefficients indicated the importance of each predictor. The industry tenure score was the strongest predictor, followed by age, which strongly contributed to allocating the data either to *Market Movers* or *Entourage* (see Appendix K for details). As a result, the two-human-agency cluster segmentation was significantly confirmed to precede further analyses.

Average Importance Mean differences

Different average importance in the four information attributes between *Market Movers* (CL1) and *Entourage* (CL2) was investigated using *t*-tests. In OCC and potential for cancellation attributes, significant differences in average importance existed between *Market Movers* and *Entourage* (see Table 21). In comparison to *Entourage*, *Market Movers*'s discount choice was more likely to be influenced by occupancy rate ($M_{MM} = 22.14$ vs. $M_{EN} = 18.39$). Conversely, *Entourage*'s discount choice was more likely to be influenced by potential for cancellation ($M_{MM} = 19.50$ vs. $M_{EN} = 25.47$).

Table 21. Average importance by human agency clusters

	Market Movers (n=59)		*Entourage* (n=54)		t	Sig.
	M	SD	M	SD		
Booking Window	34.23	18.07	32.53	16.31	0.523	0.602
Competitor's Rate	24.13	13.45	23.6	12.71	0.216	0.829
Occupancy Rate	22.14	11.39	18.39	10.32	1.826	0.071*
Potential for Cancelation	19.5	13.49	25.47	15.51	-2.191	0.031**

Note: *$p < .10$; **$p < .05$.

In effort to see different importance scores of levels within each attribute between human agency clusters, individual utilities were converted to standardized ratio. Table 22 revealed that significant different level utilities existed between *Market Movers* and *Entourage* with regard to occupancy rate. When the occupancy rate is "10% lower than previous year", *Market Movers* chose to make a discount choice more likely than *Entourage* did (M_{MM} = 41% vs. M_{EN} = 39%, $p < .05$).

Table 22. Individual utilities by human agency clusters

		Mean		t	Sig.
		Market Movers	*Entourage*		
Booking Window	7 days	40%	43%	2.20	0.14
	30 days	34%	34%	0.26	0.61
	60 days	26%	23%	2.38	0.13
Competitor's Room Rate	$10 Higher	15%	16%	0.97	0.33
	$5 Higher	17%	18%	0.55	0.46
	Same	20%	20%	0.21	0.64
	$5 Lower	23%	22%	2.43	0.12
	$10 Lower	24%	24%	0.05	0.82
Occupancy rate	Same	25%	28%	5.45	0.02*
	5% Lower	34%	34%	0.26	0.61
	10% Lower	41%	39%	7.13	0.01*
Potential for Cancelation	No	42%	40%	0.28	0.60
	Yes	58%	60%	0.28	0.60

Note: *$p < .05$.

Summary

In summary, hotel managers placed different values on the information attributes when making a discount choice. The average importance of an attribute represented how important it was to managers when making their discount choices. The results showed that managers consider the booking window to be the most preferred information, followed by competitors' room rate, potential for cancellation, and occupancy rate. Thus, proposition 1 was supported: Managers treat some information attributes more heavily than others when making discount decisions.

Specifically, in the booking window attribute, the measure for the "7 days in advance" level contributed more to the total utility than other levels. In other words, managers gear toward making a discount choice at 7 days in advance for an arrival date rather than for 30 or 60 days in advance. Proposition 2 was therefore supported: The part-worth of the "7 days in advance" level of the booking window attribute is higher than the part-worth for a different level of that attribute.

In the occupancy rate attribute, the utility for the "10% lower than last year" level contributed more to the total utility than other levels. Managers tend to make a discount choice when their occupancy performs 10% lower than the previous year, compared to other levels. Thus, it could be claimed that the part-worth of the "10% lower occupancy rate" level of the position of booking attribute is higher than the part-worth for a different level of that attribute (proposition 3).

In addition, the "competitor's rate is $10 lower than yours" level had the highest utility score compared to other levels in the competitor's room rate attribute. The lower the competitors set their rates, the more managers choose to make a discount choice. As a result, proposition 4

was supported: The part-worth of the "$10 lower competitor's rate" level of the competitor's room rate attribute is significantly higher than the part-worth for a different level of that attribute. In the potential for cancellation attribute, managers were more likely to make a discount choice when they anticipated the potential for cancellation, supporting proposition 5: The part-worth of the "anticipate cancellations from group/contract bookings" level of the external factor attribute is higher than the part-worth for a different level of that attribute.

The levels of information attributes were compared to each other by using standardized ratio. The results illustrated the conditions where managers are quicker to make adjusted actions. Hotel managers decided to offer a discount in the short term (e.g., 7 days in advance with the highest utility). Managers were likely to deliberate in making a discount choice when they see their competitors' rates being $5 or $10 lower than their room. Managers also tended to make a discount choice when they anticipate the potential for cancellation. Managers' assessment of the external environment such as weather, flight cancelations, or any other reasons that prevent guests to arrive on time lead managers to make a discount choice. The inferior hotels perform compared to the previous year, the more managers would be likely make a discount choice; managers were more likely to make a discount choice when their occupancy rate drops to 10% lower than the previous year.

Hotel institutions were classified into two clusters: *Road Warriors* and *Stars in the Universe*. The results of the statistical tests indicated different average importance on the situational information attributes between *Road Warriors* and *Stars in the Universe*. According to the results, *Road Warriors* and *Stars in the Universe* engaged in different processes of assessing situational information attributes. Both groups had different importance values of

booking window, occupancy rate, competitor's room rate, and potential for cancellation—all of which were statistically significant at the 95% significance level. *Road Warriors* focused more on booking window and potential for cancellation whereas *Stars in the Universe* based their discount choices more on booking window and competitor's room rate.

The assessment of processing information levels varied depending on hotel structures. For example, *Stars in the Universe* considered offering a discount choice more in advance than *Road Warriors* did. Also, *Stars in the Universe* were more likely to take precaution by offering a discount choice as they saw their competitors charge $5 lower than their rooms. Moreover, *Road Warriors* were more likely to consider making a discount choice even if their occupancy rate remains same from the previous year than *Stars in the Universe* did. The null hypothesis that managers do not place significantly different importance on information attributes depending on different hotel structures was rejected. Consequently, the alternative hypothesis was supported: Managers place significantly different importance on information attributes depending on different hotel structures.

Moreover, hotel managers were grouped into two clusters: *Market Movers* and *Entourage*. Managers in both groups had different average importance concerning occupancy rate and potential for cancellation, and these results were statistically significant at the 95% significance level. *Market Movers* emphasized the booking window, competitor's room rate, and occupancy rate while *Entourage*'s discount choice was more influenced by booking window, potential for cancellation, and competitor's room rate.

In terms of information levels within the attributes, only difference existed between *Market Movers* and *Entourage* with regard to occupancy rate; when the occupancy rate is "10%

lower than previous year", *Market Movers* chose to make a discount choice more likely than *Entourage* did. As a result, the null hypothesis that managers do not place significantly different importance on information attributes depending on different management expertise and experience was rejected. The alternative hypothesis was partly supported: Managers place significantly different importance on information attributes depending on different management expertise and experience.

CHAPTER FIVE: CONCLUSION

The objectives of this study were (1) to determine the creation of a discount choice and the corresponding information processing related to decision making; (2) to narrate events, stages, and cycles of choices made by hotel managers; and (3) to determine the role of human judgment based on contextual factors in the decision-making process. This study probed inside aspects of the discount decision-making process that deal with influences (e.g., external, institutional and human agency) and further examined their effects upon discount choice behavior and the influence of contextual factors upon these rules and actions. This chapter provides the conclusion to the study and discusses both theoretical and practical implications of the study. Limitations are also outlined, ultimately leading to future research suggestions.

Managers discount prices to reduce disequilibrium. Hotel managers frequently face a problem when a discrepancy between expected demand and actual demand occurs. Disequilibrium between forecasting and actual booking leads managers to make adjustments in room rates. Discounting is not a pleasant topic to discuss. In fact, managers showed an immediate negative reaction toward the topic the moment the researcher brought up the subject. However, managers agreed that discounting is a reality. Managers recognize that the heads in the beds concept is not good in the long run, but is still great in the short term. None of the managers wants discounting in their operations, but they have to live with it. As rooms are perishable products, the most expensive room is the one that managers do not sell.

One of the managers inspired the researcher as he shared the hundreds of possible price points he could set for each room:

> Let's say I have a room with a rack rate of $100 per night. I then have a bottom rate of $35 for the room that I cannot possibly go below considering fixed costs and labor. I am opting to rent out the room at any price between $35 and $100. This means each room has at least 66 different levels of discounted prices that I can offer.

The core of discussion should be directed to human agency as managers make the final judgment call. Managers are empowered to set different room rates that range from the break-even and the rack rate.

Managers need to make a high quality decision, which requires management's judgment in selecting, interpreting, and responding to information, thereby leading managers to make a final decision. For example, brand hotels within the same geographical location receive similar reports from the corporate revenue management department. However, their performance seems to deviate as some make better decisions than others. Thus, the role of management makes a significant contribution to successful operations.

Positivistic views of the means and mechanism do not reveal a complete picture of the discount decision-making process for two reasons. First, managers confront the time inconsistency over the rational decision-making process. Managers make adjustments to room rates in the present operation while relying on demand projected for the future. The discrepancy between the present and the future is exacerbated by the perishability of hotel products and the uncertain and dynamic nature of the lodging industry. Second, human judgment influences the way information is presented in the analytic tools, and management plays a prominent role in processing information and making final decisions. Although the rational approach takes place

through the application of sophisticated technologies and analytic tools (e.g., algorithms), it undervalues the subjective element in the price-setting process.

Managers make discounting decisions in a very tight window. As managers consider making a discount decision, they value information related to the booking window more than other information attributes. The extent of how much time managers have before taking any corrective actions determines the way managers make a discount decision. In particular, managers make a discount choice more often seven before an arrival date approaches than 30 or 60 days in advance. When more time is permitted, environmental conditions can be better understood and might be easily factored into decisions, meaning that managers can plan for changes (Dean & Sharfman, 1996; Olsen et al., 2008). Thus, management defers the discount choice or/and executes other strategies, such as granting rooms to third-party channels and controlling lengths of stays.

Different hotel operation structures, based primarily on size and market share, seek to make a difference in processing the booking window. The *Road Warriors* consists of smaller hotels, but these hotels account for more than half of the total room inventory in the area. Their discount choices are greatly influenced by short booking windows, and they seem to rush in dropping room rates as an arrival time approaches. Although the hotels in the larger and franchised *Stars in the Universe* observe booking windows more carefully, these hotels pay more comparable attention throughout the whole range of the booking window. Moreover, human agency, mostly grounded from industry tenure and age, also determines how managers process discount choices. The less experienced and younger managers of *Entourage* pay little attention to

the long term whereas the highly experienced and older managers in *Market Movers* place more comparable importance on the different levels of the booking window.

Furthermore, the actions of competitors influence managers' discount decisions. The results confirmed that small differences in price can make a significant difference between winning and losing business at the local level (Craig, 2009; Relihan, 1989). Faced with their competitors setting discounted rates, management follows the actions of their competitors (Akerlof & Kranton, 2005; Barney, 1986; Nelson & Winter, 1982). In the presence of competitors offering discounted rates, managers appear to be more likely to make discounting decisions. Hotel managers often feel like they have no choice but to follow suit. When competitors drop their rates dramatically, managers really do not have to think too hard but drop the rate lower than or match that of their competitors. Managers respond to competitors' rate from the moment their competitors set their rooms $5 higher than theirs, which confirms managers' responses in the interviews that hotels in fact battle over a $5-$10 difference in rate. Thus, the lower the competitors set their rates, the more managers choose to make a discount choice.

Different institution structures seek to make a difference in assessing information about competitors' room rates. Hotels in *Stars in the Universe* consider dropping their rates the moment the price difference between their rates and those of their competitors gets smaller. Closely located to main attractions, the market is very competitive; thus these hotels have to share the pie with other competitors. Even if competitors offer room rates $5 higher than theirs, hotels in *Stars in the Universe* tend to choose a discount choice. Affiliated with chains, hotels in *Stars in the Universe* are constrained by standards and rules that the chains require them to

follow. The corporate recommendations often derive from competitive market reports. Pressured from intense competition, managers in *Stars in the Universe* recognize that small rate differences will determine a winning business in the region. Thus, managers in *Stars in the Universe* seem more sensitive to competitors' room rates. Meanwhile, hotels in *Road Warriors* seem less sensitive to competitors' room rates, which is not surprising considering that these hotels account for more than half of the total room inventory in their respective areas.

As more managers consider offering discounts in response to competitors' rates, human agency can make a difference in processing discount choices. The discount choice of managers in *Market Movers* spreads out corresponding to competitors' actions whereas managers in *Entourage* seem to make random decisions, such as choosing discount choices even if competitors set their rates $10 higher than theirs. This can be explained by the idea that younger, less experienced managers might engage in trial and error until reaching success whereas experienced managers (i.e., *Market Movers*) have already developed their own patterns and routines to solve disequilibrium.

The focus on the discount decision-making process enables researchers to detect how environmental stimuli are watched by managers with deeply held views. Managers use certain rules and patterns to complete their information searches. Managerial discounting decision making often falls short of the purely rational model for managers, who are bounded by nature. Managers are not always rational when compiling and assessing information, leading to discounting that is compatible with accessibility to information and the computational capacity. Instead, managers seek key information as they can only comprehend a certain degree of information in order to make an effective, timely decision.

Human agency and its perception of reality within a specific context infuse meaning into business practices. Habitual practices are identified to show how the classification of events, activities, and institutions are put into practice as managers have developed their own knowledge and practices over time. Such practices become routine over time, when managers encounter similar problem disequilibrium. Conventions, such as the "less than 35 rule," the "80:20 rule," the call around, following suit, and trial and error, are manifestations of coping strategies to hamstring complexity in the hospitality industry. For example, a manager shared his "80:20 rule": He simply looks at 80% of the information to make pricing decisions because he believes that the four or five most important reports would tell him what he needs to know in order to make an appropriate decision in discounting. The results thus support the previous literature that decision makers simplify the decision process by selecting the most relevant information to the organization and eventually developing patterns that break down complex problems into more manageable units (Child, 1972; Duhaime & Schwenk, 1985; Hitt & Tyler, 1991; March & Simon, 1958; Weick, 1969).

In summary, a discount choice is the product of human agency and social forces over time, distinct from the rational model. Human agency and its perception of reality within a specific context infuse meaning into business practices. The role of algorithms (i.e., review management) during the pricing process is only to register actions and to derive "learned" responses from these actions. But the interpretation of these actions is strictly a human activity (manager), complete with risks of human error. Thus, only managers have the ability to make the choice as they use a collection of complex patterns in the lodging industry to perceive meaningful patterns in the environment and make a final judgment. The application of the

constructionist approach indicated which aspects of the context matter in the construction of a specific choice by retrieving subjective accounts of those involved in the process in generating and sustaining patterns, procedures, and routines.

Theoretical implication

This research makes three contributions to the discounting literature. First, the main theoretical contribution is to discover a human judgment process within the lodging industry distinct from most management and lodging literature. In order to have a complete grasp of the discount decision-making process, a complex process entailing both positivistic and constructivist perspectives is required. A positivistic view derived from analytical theories is not sufficient to reflect a comprehensive picture of business practices. A constructionist approach reveals the knowledge of organizations and strategies shaped in social processes, where the truth status of any concept, statement, or argument is dependent on its coherence with generally held beliefs and values (Durand & Vaara, 2006).

This study shifted the locus of the analysis of hotel price setting from *outcome* to *process*, thereby moving away from determining a few factors that could influence a discount choice. Instead, a constructionist approach is taken to look at the process of how managers make a discount choice in specific contexts and settings. As a unit of analysis, process provides a rich, contextual foundation for deeper knowledge and insights of how specific price decisions occur.

Process studies are even less common in the lodging literature, and an attempt to uncover what goes on in pricing has been considered a daunting task. The discount decision-making process framework goes beyond market equilibrium and captures rich interactions of managers' decisions by narrating emergent actions and activities in discounting. Consequently, the

framework presents the identification of the habitual management practices and helps enhance the understanding of how management's practices are constructed and applied to justify actions and choices with regard to price setting. The research captures situational information that affects managers' discount choice and habitual behavior that is developed when managers repeatedly apply their knowledge and learned behaviors to make a discount choice.

Based on the constructionist and positivistic approaches, mixed-method techniques were utilized to expand the scope and improve the analytic power of the study. Qualitative data were gathered to grasp insights of the "black box" of the discount decision-making process in order to narrate the overall picture of the phenomenon from the perspective of the decision makers. The dimension of situational attributes was identified based on the information obtained through interviews and documentations. A quantitative study was then conducted to investigate how managers placed importance on situational attributes in discount decisions and how management's discount decision-making process differed based on institution and human agency.

The central premise of mixed method provides a better understanding of research problems than either approach alone (Creswell & Clark, 2007). A mixed method design is respected in the literature because it combines techniques more closely resembling what researchers actually use in practice (Johnson & Onwuegbuzie, 2004). Thus, the combination of qualitative and quantitative techniques in mixed methods research often results in better research when compared to mono-method research (Johnson & Onwuegbuzie, 2004).

Moreover, this study attempted to fill the void between the analysis and execution of strategy by examining the operational discount decision-making process in the lodging industry.

This complex process study opened up the understanding of managerial decision making, its effect upon discount choice behavior, and the influence of contextual factors upon these rules and actions. In closing the gap between analytical theory and actual business, this study endeavored to reflect a more comprehensive picture of pricing practice. Analytical, institutional, and social components of the pricing decisions were examined simultaneously. The focus on process as the unit of analysis enabled direct observation by the researcher and, consequently, provided a rich reporting of experiences. Thus, direct observation also facilitated a deeper look into the black box, resulting from the positivist perspective when assessing discounting.

In conclusion, the main theoretical contribution of this study is its demonstration that managerial frameworks based on the rational premise are not complete. These frameworks should be complemented with a human judgment framework that provides a richer account of how managers in the lodging industry approach the complex price-setting situation. The rational processing system cannot account for the variance in settings among similar hotels as part of a chain, for example. The human judgment process, discovered and examined in this study, promotes a richer understanding of the process of discounting happening in the lodging industry. This process is featured by a non-conscious processing of information (most managers are not aware of their information-processing method), the retrieval of information is based on associations of patterns (e.g., heuristic rules such as the 80:20 rule), the context in which this processing occurs is high paced (speed is of the essence), and the outcome of the decision is imbued with judgments.

The other theoretical contribution is the shift to time as a key variable in determining price from space as a key determinant according to revenue management. The algorithm of most

pricing literature emphasizes space by counting the number of rooms sold versus unsold. A paradigm shift in the discussion has occurred as managers now place higher importance on time (i.e. the booking window). This change in the basic assumptions stems from the pressure managers have to tolerate as an arrival date approaches; the perishability of hotel products amplifies this pressure due to the fear of losing revenue over rooms unsold. In the managerial discounting decision-making process, time is perceived as a determining factor, which leads managers to make discount choices.

Managerial implication

The discounting decision-making process framework reinforces that hotel managers need to consider a wide variety of both internal and external factors when designing, implementing, and improving price strategies. The discounting decision-making process is influenced by hotel institutions and human agency. Certain events and conditions are classified as alarming signals for making a discount choice. Through this study, hotel managers learned under what conditions other managers consider making a discount choice. Information attributes such as booking window and competitors' room rates are thought to be more valuable than other information. The time remaining before an arrival date is considered to be the most critical information among managers. The critical role of the booking window strengthens the premise of this study related to time inconsistency, which causes the discrepancy between forecasting and reality. This information seems inconsistent with the practice of the lodging industry that looks at the comparison of price points over the same time unit.

The emphasis on the static point in time needs to be reevaluated as managers indicate current performance levels compared to the previous year as the least preferable information for

determining their discount decisions. For example, hotels regularly receive analytical reports from third-party distribution channels, such as TravelClick. Such information is based on the comparison of current performance and past performance of the same day of the week, month, or year. Although the static assessment of the current occupancy rate compared to that of the previous year is important, managers should focus more on the continuing valuation of current performance in relation to the booking window.

Thus, managers are encouraged to observe booking windows carefully when making a discount choice. As an arrival date nears, managers choose to make a discount choice. In particular, hotel managers are more likely to make a discount choice when booking shifts from two months in advance to one month in advance. It is recommended that managers pay close attention to bookings more in advance so that they can detect discrepancies between forecasting and reality in a timely manner. In this way, managers can make operational adjustments on rate strategies by controlling not only room rates, but also lengths of stays and channels.

It should be noted that managers attach different importance to situational information attributes concerning different institutions and human agency when making a discount choice. Hotel managers should have a better understanding of their products related the contextual conditions. First, depending on the characteristic of the institution, they should look at different situational information. Based on two different hotel segments, this study suggests that each hotel identify itself in the segment and pay different attention to information attributes when making a discount choice, as shown in Figure 7.

Hotels in *Road Warriors*, which are smaller in size, are not located near major attractions, but seem to fill the need of leisure travelers passing through the areas. Less competition exists

because the regional area does not serve as a main attraction. These hotels thus place great importance on booking windows and the potential for cancellation when considering a discount. If they do not see enough reservations in the short term and foresee the potential for cancellation, *Road Warriors* hotels tend to make a discount choice. They do not seem to indulge in implementing other pricing strategies, but rather drop the rate.

These hotels put less importance on competitors' room rates because the hotels play a monopolistic role in the area as they account for more than half of the total room inventory. The hotels also might not sell all rooms available because of the lower demand, which is confirmed by the least importance in the occupancy rate attribute. However, as few competitors exist, these hotels can manage to generate enough cash flow to survive by meeting the needs and wants of leisure travelers who need rooms at the last minute.

Hotels in *Stars in the Universe* are larger in size and affiliated with chains/brands. They have a mix of leisure and business reservations for several reasons. These hotels are located near main attractions (e.g., beach, downtown, or convention center), so both leisure and business travelers are attracted to them. As these hotels are larger, they are more likely to have space and facilities for hosting meetings and events, thereby attracting business travelers. In addition, the corporate chain seems to secure reservations from both leisure and business markets. As a result, hotels in *Stars in the Universe* enjoy a large demand, as confirmed by their higher occupancy rate. More rooms, more competitors, more facilities, and close proximity to main attractions lead to a higher ADR for *Stars in the Universe*.

Hotels in *Stars in the Universe* consider the booking window to be the most critical information, followed by competitors' room rates, occupancy rate, and potential for cancellation.

The length of time remaining before an arrival date serves as the most important piece of information when making a discount choice. These hotels emphasize knowing competitors' room rates as they have many competitors and consistently compete for a greater market share in the area. In addition, although these hotels consider some information more important than other information, they give a sufficient look at other information as well. Hotels in *Stars in the Universe* place comparable importance on information attributes when making a discount decisions.

Second, managers should know others' products as each hotel product coexists in relation to its surroundings. Managers should monitor their competitors' room rates. Price decisions are made around social activities. Discount decision-making behavior turns out to involve many social interactions, and a discount choice is the outcome of interactions with competitive surroundings. Hotel managers appear to keep an eye on competitors' room rates in order to ensure that their rates do not exceed those of competitors. Managers are aware that small differences can lead to a big difference in bookings, especially in highly competitive markets. Managers seem to adjust actions quickly when their competitors' rates change from "$5 higher than yours" to "same as theirs." Thus, managers should observe competitors' room rates and also consider offering a discount when their competitors set rates to be the same as theirs.

Third, managers should know who is in charge of making decisions in their surroundings. This research recognizes that different human agency and its perception of reality within a specific context infuse meaning into business practices. Two human agency clusters were identified: *Market Movers* and *Entourage. Market Movers* consists of more experienced and educated, older, and predominantly male experts. As either a general manager, assistant

general manager, or revenue manager, they are the ones who move the market. These managers have gained the knowledge and know-how necessary during their extensive experience in the industry. Managers in *Market Movers* focus importance on booking windows, followed by competitors' room rates, occupancy rate, and potential for cancellation. They monitor bookings ahead of time and consider offering a discount as an arrival date nears. These managers also show great concern about competitors' room rates. They compare their rates to competitors' rates in order to ensure that their own rates do not go over competitors' room rates.

Managers in *Entourage* are younger, less experienced, and less educated. They work in marketing/sales or front desk/operation. These managers tend to follow and attend to the industry leaders. These novices engage in various trial and error efforts along the way and can become rising stars in the industry when their efforts succeed. Yet these managers lack experience and education and tend to make unstable judgments and throw odd balls, which can lead to harmful consequences in their institution and the industry. They often act quickly to offer a discount and cause a price war in the lodging industry.

Entourage's discount choice is more influenced by booking window, followed by potential for cancellation, competitors' room rate, and occupancy rate. Managers in *Entourage* consider the booking windows to be the most critical factor when making a discount choice, and they act quickly to offer a discount when an arrival date nears. They tend to respond to immediate changes in booking; thus, the potential for cancellation determines their discount choice. If a manager in the competitive hotel is a member of *Entourage*, managers should be careful to follow suit. If managers in the competitive market are members of *Entourage*, they

might be impatient and discount too much and too fast. Following suit can thus be greatly impacted by who is making the decision.

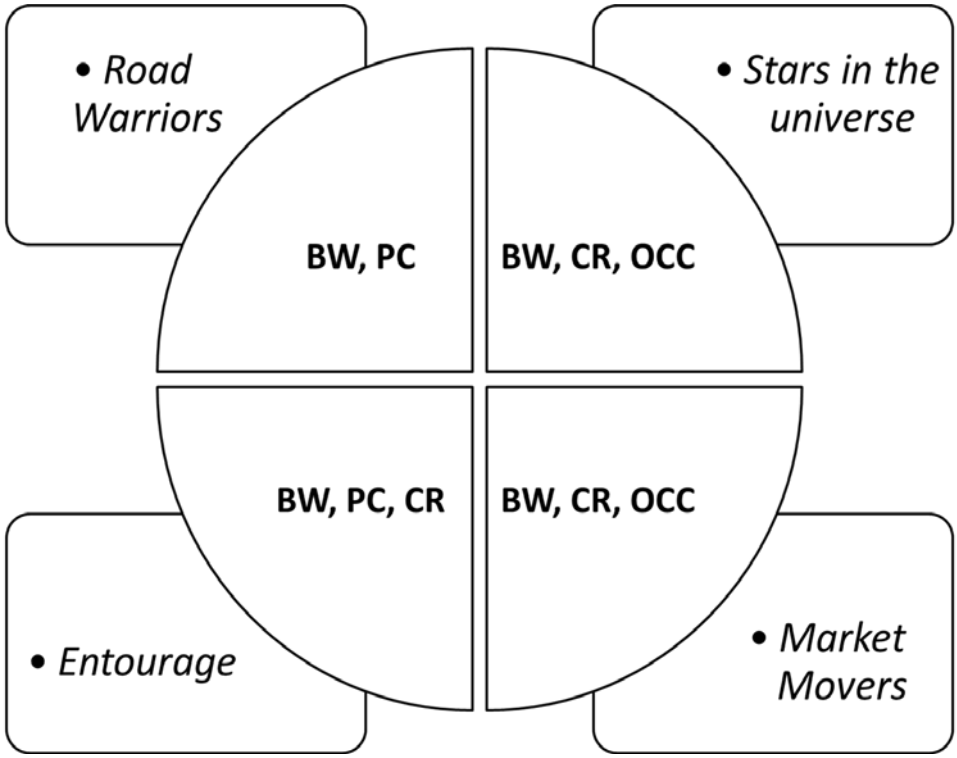


Figure 7. Patterns of processing information in discount decision-making

Limitations and future research directions

There are several limitations that should be discussed, which lead to directions for future studies. First, adopting a constructionist position, theories are accepted as long as they are coherent to actual business. However, a constructionist approach is limited as it runs the risk of ontological relativism due to the inability to distinguish between more or less true theories or propositions (Durand & Vaara, 2006; Huber & Mirosky, 1997). From the constructivist view, patterns and themes are context dependent and complicated by the ongoing constructions of the contextual influences in the lodging industry. Researchers have only a certain degree of ability to directly observe the underlying structures, processes, and mechanisms at play. It is thus difficult to analyze any phenomena without notions such as causal explanation and cognitive cost of management's processing of the information (Hitt & Tyler, 1991). In order to mitigate the issue, this study extended its argument beyond observation and categorization to include a quantitative approach. Using a survey method, the second study explored the nature of the interface and the impact of social, institutional, and human influences on the process of making a discount choice.

Second, the interviews identified multiple information attributes for a discount choice: booking window, occupancy rate, competitors' room rate, and potential for cancellation. Situational information attributes were determined by the researcher based on options, attributes, and information available, which can be a limitation (Jacoby et al., 1987). For example, a competitor's room rate ranges from $10 lower to $10 higher, which might not reflect the exact situation. However, situational information attributes and ranges were obtained from the field. Structured interviews with hotel managers served to develop consensus among researchers and

participants regarding participants' attributes when making a discounting decision and its general applicability (Hays & Wood, 2011).

Third, a discount choice can result from events other than those identified in this study. Internal and external factors chosen to represent the environment might not capture the complete picture of the price decision-making process. Other environmental and institutional factors that drive the process can be included in future studies. For example, managers affiliated with brands might feel pressured by the corporation's expectations; thus, their discount decisions have little to do with situational attributes. Bonuses or commissions can be promised upon increased revenue. In such circumstances, managers will defer discount decisions regardless of the market conditions. Therefore, the performance expectations for the quarter as mandated by the corporation needs to be considered in future studies. Another improvement could be made if, for example, measures of environment stability (Eisenhardt & Schoonhoven, 1990; Murray, 1989; Priem, 1990) could be employed. To the extent that managers perceive the stability of environments, it could be meaningful to detect the level of uncertainty and complexity in their environments.

Although this research focused on different operation types in the lodging industry, multiple affiliations for a single hotel are possible (e.g., a chain, a management company, and an owner). For example, according to Smith Travel Research (STR), the chain represents the hotel brand whereas a management company operates a hotel for another party. Institutional changes are plausible as different chains merge together or a different management company is hired at the institution. Therefore, future studies should investigate hotels at different times as the hotels might go through institutional changes.

In terms of ownership, companies can own several hotels while other chains own their own hotels. Individual owners can own hotels from a variety of different chains. A discount choice can be greatly impacted by ownership. Ultimately, ownership has the power to detain a chain, fire managers, and change a management company. Owners' expectations for revenue will play a significant role in management's discounting decision-making process. Investigating the role of ownership in the discounting decision-making process is recommended in future studies.

Faced with a similar problem, managers form habitual patterns of assessing information and make the same choice within an institutional context. Decision makers are often prone to errors and bias (Kahneman & Tversky, 2003). Relying on the experience of the management can be mismanaged as a pricing tool due to the myopia of managers, who need to understand the relationship among cost, price, volume, and profit and where alternative strategies need implementation (Monroe, 2002). For example, high quality decisions might be a trade-off between accurate decisions and speedy decisions. Experienced managers can synthesize forecasting quickly to make a judgment call, but their decisions might not be accurate. Detecting the relationship between decisions' accuracy and speed is also recommended.

Despite these limitations, efforts have been made to shed light on the discount decision-making process in the lodging industry, and the current study can serve as a pioneer study that provides an illustration of how human agency plays a role in this process. This study attempted to close the gap between critical analysis and the execution of strategy.

Summary

This chapter presented a discussion of the study, theoretical and practical implications, and directions for future research along with limitations of this study. The major findings of the

study identified the habitual management practices and enhanced the understanding of how management's knowledge is constructed as well as how this knowledge is applied to justify actions and choices. Managers seem to search for stability in a volatile environment and, thus, constantly attempt to transform the unpredictable elements in the market into routinized protocols for action. Examining the discount decision-making proves thus provided new insights into the resources and capabilities required to set and change prices in the hospitality industry.

APPENDIX A: IRB APPROVAL LETTER FOR INTERVIEWS

University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Approval of Exempt Human Research

From: **UCF Institutional Review Board #1**
FWA00000351, IRB00001138

To: **Seung Hyun Lee**

Date: **March 11, 2013**

Dear Researcher:

On 3/11/2013, the IRB approved the following activity as human participant research that is exempt from regulation:

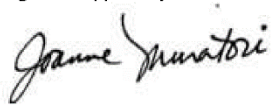
Type of Review:	Exempt Determination
Project Title:	Managerial Process of Discount Decision Making in the Lodging Industry: the Role of Intuition
Investigator:	Seung Hyun Lee
IRB Number:	SBE-13-09162
Funding Agency:	
Grant Title:	
Research ID:	N/A

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

On behalf of Sophia Dziegielewski, Ph.D., L.C.S.W., UCF IRB Chair, this letter is signed by:

Signature applied by Joanne Muratori on 03/11/2013 03:11:37 PM EST



IRB Coordinator

APPENDIX B: INTERVIEW QUESTIONS

- What is your goal with pricing? Specify a goal for long term and short term if applicable.
- How is your initial price set up?
- Who are involved in pricing?
- What kinds of information do you seek to set initial prices?
- What are the important factors you consider when price adjustment (markup or markdown)?
- What are the constraints for you to make a price adjustment decision?
- Do you monitor how the booking changes over time? If yes, how often?
- Under what conditions do you consider price adjustment? Explain the conditions and give us a recent example.
- Under such conditions, what kinds of information do you gather/analyze/interpret?
- Where do you obtain the information from? How do you respond to the information?
- At what point, do you stop gathering more information before making a decision?
- How do you define discounting?
- How do you define your competition?
- How do you obtain the competitions' information? How do you interpret the information and respond to the competitors' action?
- How do you describe unstable environment?
- Under stable environment, how do you respond to the signals (e.g. low occupancy rate)?

APPENDIX C: CBC DESIGN EFFICIENCY TEST

Task generation method is 'Balanced Overlap' using a seed of 1.

- Based on 3 version(s).
- Includes 42 total choice tasks (14 per version).
- Each choice task includes 4 concepts and 4 attributes.

A Priori Estimates of Standard Errors for Attribute Levels

Att/Lev		Freq.	Actual	Ideal	Effic.	
1	1	56 (this level has been deleted)				7 days
1	2	56	0.2012	0.1985	0.9739	30 days
1	3	56	0.1998	0.1985	0.9874	60 days
2	1	56 (this level has been deleted)				Same
2	2	56	0.1993	0.2015	1.0227	5% Lower
2	3	56	0.2029	0.2015	0.9865	10% Lower
3	1	34 (this level has been deleted)				$10 Higher
3	2	33	0.2665	0.2609	0.9586	$5 Higher
3	3	34	0.2595	0.2609	1.0112	Same
3	4	34	0.2575	0.2609	1.0268	$5 Lower
3	5	33	0.2625	0.2609	0.9877	$10 Lower
4	1	84 (this level has been deleted)				No
4	2	84	0.1563	0.1562	0.9979	Yes

Note: The efficiencies reported above for this design assume an equal number of respondents complete each version.

Logit Report with Simulated Data

- Main Effects: 1 2 3 4
- Build includes 100 respondents

Total number of choices in each response category:

Category Number Percent

1 343 24.50%

2 324 23.14%

3 374 26.71%

4 359 25.64%

There are 1400 expanded tasks in total, or an average of 14.0 tasks per respondent.

Iter 1 Log-likelihood = -1938.03960 Chi Sq = 5.54500 RLH = 0.25050

Iter 2 Log-likelihood = -1937.92867 Chi Sq = 5.76686 RLH = 0.25052

Iter 3 Log-likelihood = -1937.92421 Chi Sq = 5.77580 RLH = 0.25052

Iter 4 Log-likelihood = -1937.92403 Chi Sq = 5.77615 RLH = 0.25052

Iter 5 Log-likelihood = -1937.92402 Chi Sq = 5.77617 RLH = 0.25052

*Converged

	Effect	Std Err	t Ratio	Attribute Level
1	0.03190	0.04009	0.79558	1 1 7 days
2	-0.02544	0.03984	-0.63847	1 2 30 days
3	-0.00646	0.03934	-0.16417	1 3 60 days
4	0.01222	0.03993	0.30600	2 1 Same
5	-0.05678	0.04084	-1.39034	2 2 5% Lower
6	0.04456	0.04077	1.09308	2 3 10% Lower

7	0.02017	0.05692	0.35433	3	1	$10 Higher
8	0.05850	0.05841	1.00163	3	2	$5 Higher
9	-0.00674	0.05558	-0.12130	3	3	Same
10	-0.02058	0.05708	-0.36048	3	4	$5 Lower
11	-0.05135	0.05901	-0.87015	3	5	$10 Lower
12	0.03411	0.02711	1.25800	4	1	No
13	-0.03411	0.02711	-1.25800	4	2	Yes

The strength of design for this model is 570.38505

(The ratio of strengths of design for two designs reflects the D-Efficiency of one design relative to the other.)

APPENDIX D: IRB APPROVAL LETTER FOR SURVEYS

University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Approval of Exempt Human Research

From: **UCF Institutional Review Board #1**
FWA00000351, IRB00001138

To: **Seung Hyun Lee**

Date: **June 27, 2013**

Dear Researcher:

On 6/27/2013, the IRB approved the following activity as human participant research that is exempt from regulation:

Type of Review:	Exempt Determination
Project Title:	Managerial Process of Discount Decision Making in the Lodging Industry: the Role of Intuition
Investigator:	Seung Hyun Lee
IRB Number:	SBE-13-09447
Funding Agency:	
Grant Title:	
Research ID:	N/A

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

On behalf of Sophia Dziegielewski, Ph.D., L.C.S.W., UCF IRB Chair, this letter is signed by:

Signature applied by Patria Davis on 06/27/2013 10:18:08 AM EDT

IRB Coordinator

APPENDIX E: SURVEY INSTRUMENT

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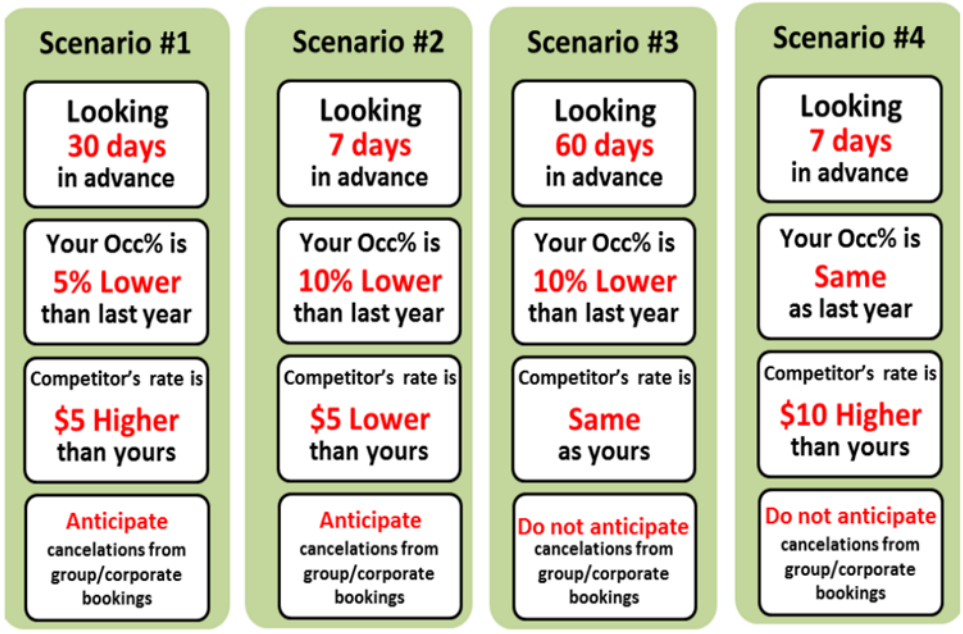
Discount Decision-Making Survey

SECTION I Scenarios about discount decision-making

From the scenarios presented below, please select the one scenario that will most likely drive you to offer a discount from rack rate. (Scenarios are for transient leisure demand only)

One sample set of 14 sets of scenarios

Version#1[q:1card:1]



☐ **Scenario #1** ☐ **Scenario #2** ☐ **Scenario #3** ☐ **Scenario #4**

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SECTION II Information about hotel performance

1. Please indicate your hotel information:

Zip code of your hotel	
Number of rooms	_____(# of rooms)
Total room inventory in your competitive set	_____(# of rooms)

2. Indicate the ownership/operation structure of your hotel (Check √ all that apply):

□ Independent □ Management □ Domestic brand/chain □ International brand/chain

3. What is your average occupancy rate?

□ < 50% □ 61%-70% □ 81%-90%
□ 51%- 60% □ 71%-80% □ > 91%

4. What is your Average Daily Room rate?

□ $60 or less □ $81-$100 □ $121-$140 □ $161-$180 □ $201-$220
□ $61-$80 □ $101-$120 □ $141-$160 □ $181-$200 □ $221 or higher

5. Please indicate the percentage of your revenue coming from the following sources:

Rooms	_____(%)
Food &Beverage	_____(%)
Other	_____(%)

6. Please indicate the percent of your reservation coming from the following sources:

Leisure	_____(%)
Business	_____(%)
Groups/Corporates	_____(%)

7. Please indicate the location of your hotel. Your hotel is located: (Check √ only one)

□ On the Main Attraction (e.g. on the beach, downtown, convention center, or other events)

□ Within Walking Distance to a main attraction (less than 1 mile from the main attraction)

□ Within Driving Distance to a main attraction (more than 1 mile from the main attraction)

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8. In comparison to your competitors, your hotel has:

Room quality	Worse	① ② ③ ④ ⑤ ⑥ ⑦	Better
Room price	Expensive	① ② ③ ④ ⑤ ⑥ ⑦	Affordable
Room amenities	Fewer	① ② ③ ④ ⑤ ⑥ ⑦	More
Food quality	Worse	① ② ③ ④ ⑤ ⑥ ⑦	Better
Food price	Expensive	① ② ③ ④ ⑤ ⑥ ⑦	Affordable
Variety of menu items	Fewer	① ② ③ ④ ⑤ ⑥ ⑦	More
Facilities (e.g. pool, spa)	Worse	① ② ③ ④ ⑤ ⑥ ⑦	Better
Meeting space	Worse	① ② ③ ④ ⑤ ⑥ ⑦	Better

SECTION III Information about the decision maker

9. In which department do you work? (Check √ only one)

☐ Owner ☐ Rooms division ☐ Revenue management ☐ Front Desk
☐ General Manager/AGM ☐ Sales ☐ Marketing ☐ Other

10. How long have you worked in your current position?

☐ Less than 1 year ☐ 1-5 years ☐ 6-10 years ☐ 11-15 years ☐ More than 16 years

11. How long have you worked in the lodging industry?

☐ Less than 1 year ☐ 1-5 years ☐ 6-10 years ☐ 11-15 years ☐ More than 16 years

12. What is your gender?

☐ Male ☐ Female

13. What is your age?

☐ 18-24 years old ☐ 35-44 years old ☐ 55-64 years old
☐ 25-34 years old ☐ 45-54 years old ☐ 65 or older

14. What is your highest level of education? (Check √ only one)

☐ High school ☐ Some college ☐ College graduate ☐ Graduate degree ☐ Other:

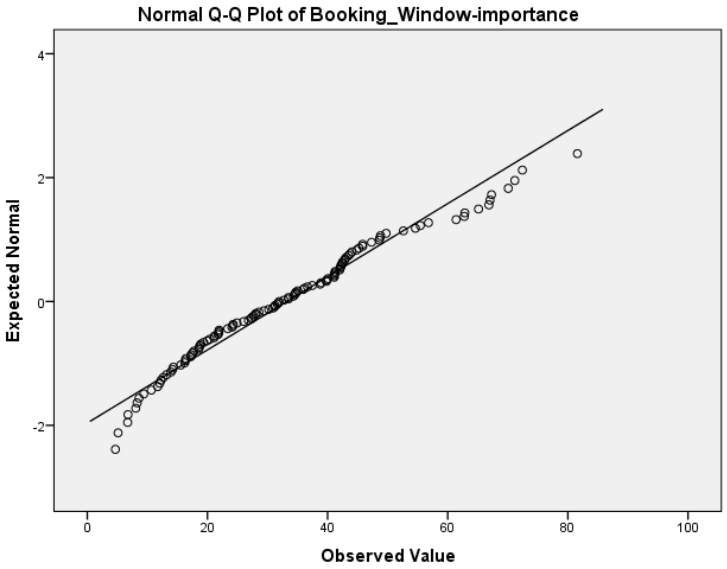
Thank you for your participation!

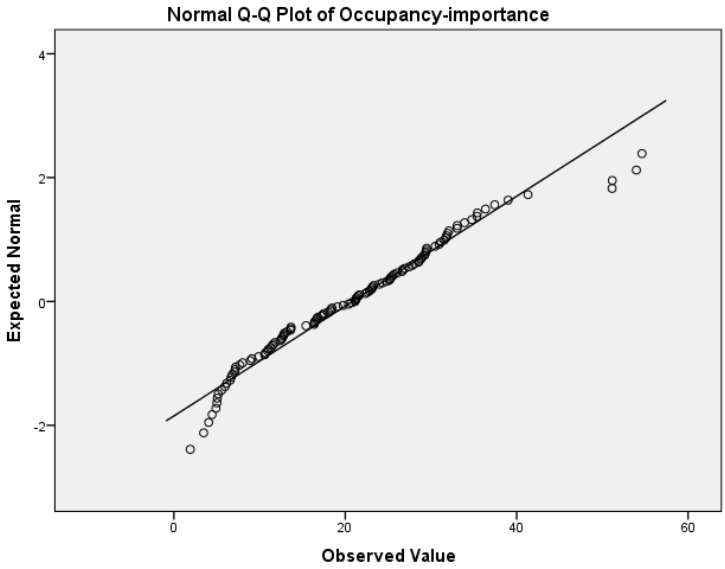
APPENDIX F: NORMALITY

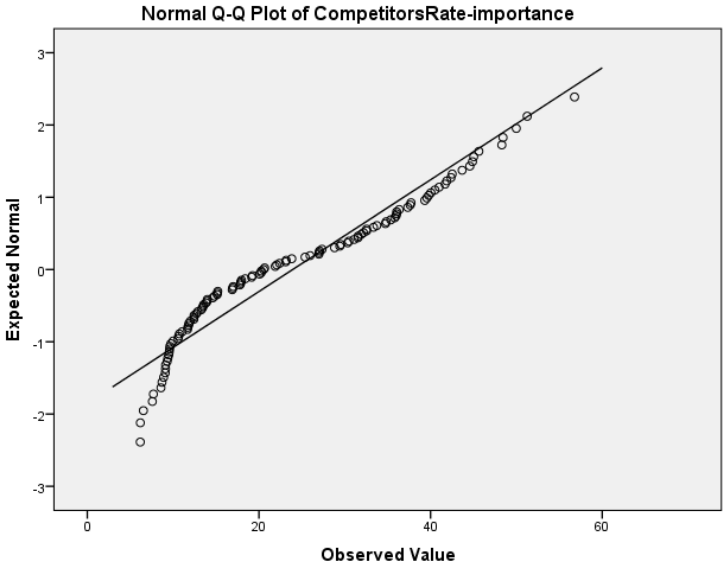
Tests of Normality

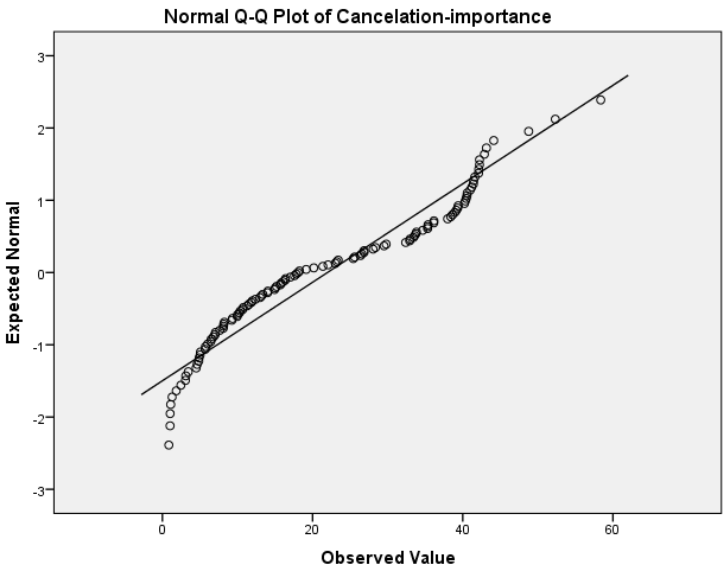
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Booking Window-importance	.072	117	.194	.967	117	.006
Occupancy-importance	.080	117	.065	.959	117	.001
Competitors Rate-importance	.135	117	.000	.928	117	.000
Cancelation-importance	.118	117	.000	.928	117	.000

a. Lilliefors Significance Correction




Normal Q-Q Plot of Occupancy-importance
Expected Normal
Observed Value
4
2
0
-2
0
20
40
60


Normal Q-Q Plot of CompetitorsRate-importance
Expected Normal
Observed Value
3
2
1
0
-1
-2
-3
0
20
40
60



The results of the Kolmogorov-Smirnov statistic show the normality of the distribution of scores. Non-significant results in Booking Window and Occupancy Rate indicate normality. In Competitor Rate and Cancelation, significant results show the violation of normality assumption. However, many measures used in the social sciences have scores that are skewed either positively or negatively. This does not necessarily indicate a problem with the scale but rather reflects the underlying nature of the construct being measured (Pallant, 2007). Then, an inspection of the normal probability plots is made. The observed value for each score is plotted against the expected value from the normal distribution. Reasonably straight lines suggest a normal distribution. Therefore, the distribution of average importance is reasonably normal.

APPENDIX G: CORRELATION BETWEEN SETS OF UTILITIES

Levels	Average Utilities (Zero-Centered Diffs)	
	First Random Half of Sample	Other Random Half of Sample
7 days	41.21	41.31
30 days	5.01	4.95
60 days	-46.21	-46.26
Same	-36.25	-36.22
5% Lower	3.76	3.87
10% Lower	32.48	32.35
$10 Higher	-38.37	-37.94
$5 Higher	-19.25	-19.23
Same	2.27	2.10
$5 Lower	22.39	21.94
$10 Lower	32.96	33.13
No	-32.15	-32.10
Yes	32.15	32.10

Note: r= 0.99998; r^2= 0.99996; Relative error= 0.0038%

APPENDIX H: HOTEL CLUSTER VALIDATION

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Size* Hotel Cluster	88	75.2%	29	24.8%	117	100.0%
Market Share* Hotel Cluster	88	75.2%	29	24.8%	117	100.0%
Operation * Hotel Cluster	88	75.2%	29	24.8%	117	100.0%
OCC * Hotel Cluster	88	75.2%	29	24.8%	117	100.0%
ADR * Hotel Cluster	88	75.2%	29	24.8%	117	100.0%
Market Segment * Hotel Cluster	88	75.2%	29	24.8%	117	100.0%
Location * Hotel Cluster	88	75.2%	29	24.8%	117	100.0%

Crosstab

Count

		Hotel Cluster		Total
		CL1	CL2	
Size	< 199	22	6	28
	200-299	12	9	21
	300-699	1	22	23
	> 700	0	16	16
Total		35	53	88

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	42.857[a]	3	.000
Likelihood Ratio	52.280	3	.000
Linear-by-Linear Association	38.959	1	.000
N of Valid Cases	88		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.36.

Crosstab

Count

		Hotel Cluster		Total
		CL1	CL2	
Market Share	1-25%	8	41	49
	26-50%	3	10	13
	51-75%	9	1	10
	76-100%	15	1	16
Total		35	53	88

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	42.751[a]	3	.000
Likelihood Ratio	46.643	3	.000
Linear-by-Linear Association	38.472	1	.000
N of Valid Cases	88		

a. 1 cells (12.5%) have expected count less than 5. The minimum expected count is 3.98.

Crosstab

Count

		Hotel Cluster		Total
		CL1	CL2	
Operation	Non-Franchise	9	4	13
	Franchise	26	49	75
Total		35	53	88

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	5.526[a]	1	.019		
Continuity Correction[b]	4.177	1	.041		
Likelihood Ratio	5.434	1	.020		
Fisher's Exact Test				.030	.021
Linear-by-Linear Association	5.463	1	.019		
N of Valid Cases	88				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.17.

b. Computed only for a 2x2 table

Crosstab

Count

		Hotel Cluster		Total
		CL1	CL2	
OCC	< 60%	19	0	19
	61-70%	11	5	16
	71-80%	4	21	25
	> 81%	1	27	28
Total		35	53	88

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	55.597[a]	3	.000
Likelihood Ratio	67.799	3	.000
Linear-by-Linear Association	52.113	1	.000
N of Valid Cases	88		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.36.

rosstab

Count

		Hotel Cluster		Total
		CL1	CL2	
ADR	$100 or less	8	6	14
	$101-$140	18	8	26
	$141-$180	9	15	24
	$181 or higher	0	24	24
Total		35	53	88

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	27.083[a]	3	.000
Likelihood Ratio	35.313	3	.000
Linear-by-Linear Association	20.987	1	.000
N of Valid Cases	88		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.57.

Crosstab

Count

		Hotel Cluster		Total
		CL1	CL2	
Market Segment	Leisure	30	32	62
	Business	5	21	26
Total		35	53	88

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	6.501[a]	1	.011		
Continuity Correction[b]	5.341	1	.021		
Likelihood Ratio	6.944	1	.008		
Fisher's Exact Test				.016	.009
Linear-by-Linear Association	6.427	1	.011		
N of Valid Cases	88				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 10.34.

b. Computed only for a 2x2 table

Crosstab

Count

		Hotel Cluster		Total
		CL1	CL2	
Location	Very close to the Main Attraction	1	32	33
	Close to a main attraction	2	13	15
	Distant to a main attraction	32	8	40
Total		35	53	88

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	49.998[a]	2	.000
Likelihood Ratio	57.511	2	.000
Linear-by-Linear Association	45.357	1	.000
N of Valid Cases	88		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.97.

APPENDIX I: HOTEL INSTITUTION DISCRIMINANT ANALYSES

Group Statistics

Hotel cluster		Mean	Std. Deviation	Valid N (listwise)	
				Unweighted	Weighted
CL1	Hotel Size	1.4000	.55307	35	35.000
	Market Share	2.8857	1.20712	35	35.000
	Operation	1.7429	.44344	35	35.000
	OCC	1.6286	.80753	35	35.000
	ADR	2.0286	.70651	35	35.000
	Market Segment	1.1429	.35504	35	35.000
	Location	2.8857	.40376	35	35.000
CL2	Hotel Size	2.9057	.96604	53	53.000
	Market Share	1.2830	.60056	53	53.000
	Operation	1.9245	.26668	53	53.000
	OCC	3.4151	.66315	53	53.000
	ADR	3.0755	1.03495	53	53.000
	Market Segment	1.3962	.49379	53	53.000
	Location	1.5472	.74849	53	53.000
Total	Hotel Size	2.3068	1.10753	88	88.000
	Market Share	1.9205	1.18634	88	88.000
	Operation	1.8523	.35686	88	88.000
	OCC	2.7045	1.13623	88	88.000
	ADR	2.6591	1.04921	88	88.000
	Market Segment	1.2955	.45886	88	88.000
	Location	2.0795	.91251	88	88.000

Tests of Equality of Group Means

	Wilks' Lambda	F	df1	df2	Sig.
Hotel Size	.552	69.741	1	86	.000
Market Share	.558	68.180	1	86	.000
Operation	.937	5.762	1	86	.019
OCC	.401	128.465	1	86	.000
ADR	.759	27.341	1	86	.000
Market Segment	.926	6.860	1	86	.010
Location	.479	93.672	1	86	.000

Log Determinants

cluster-jenna	Rank	Log Determinant
CL1	7	-8.475
CL2	7	-7.182
Pooled within-groups	7	-6.454

The ranks and natural logarithms of determinants printed are those of the group covariance matrices.

Test Results

Box's M		106.625
F	Approx.	3.456
	df1	28
	df2	18552.480
	Sig.	.000

Tests null hypothesis of equal population covariance matrices.

Eigenvalues

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	4.868[a]	100.0	100.0	.911

a. First 1 canonical discriminant functions were used in the analysis.

Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.170	145.986	7	.000

First, large mean differences between CL1 and CL2 suggest that these may be good discriminators. Second, tests of equality of group means provides strong statistical evidence of significant differences between means of Cluster 1 and Cluster 2 for all independent variables including OCC and location producing very high F values. Third, Box's M tests the null hypothesis that the covariance matrices do not differ between groups formed by the dependent. Box's M tests should be non-significant and the log determinants should be equal. In this case the log determinants appear similar and Box's M is significant. However, with large samples, a significant result is not regarded as too important. Forth, a canonical correlation of .911 suggests the model explains 98.2% of the variation in the grouping variable. Lastly, Wilks' lambda indicates the significance of the discriminant function. A highly significant function is observed with 17% of total variability not explained.

Standardized Canonical Discriminant Function Coefficients

	Function
	1
Hotel Size	.640
Market Share	-.439
Operation	-.029
OCC	.653
ADR	-.064
Market Segment	.020
Location	-.459

The discriminant coefficients indicate the importance of each predictor. OCC score was the strongest predictor, followed by Hotel Size and these two variables with large coefficients stand out as those that strongly predict allocation to CL1 or CL2. Operation Structure and Market Segment were less successful as predictors.

Structure Matrix

	Function
	1
Hotel Size	.554
Market Share	-.473
Operation	.408
OCC	-.404
ADR	.256
Market Segment	.128
Location	.117

Pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions
Variables ordered by absolute size of correlation within function.

The structure matrix table shows the correlations of each variable with each discriminate function. These Pearson coefficients are structure coefficients or discriminant loadings. They serve like factor loadings in factor analysis. By identifying the largest loadings for each discriminate function the researcher gains insight into how to name each function. Here we have Hotel Size and Market Share which suggest a label of Size and Competitiveness as the function that discriminates between CL1 and CL2. In general, 0.30 is seen as the cut-off between important and less important variables.

APPENDIX J: HUMAN AGENCY CLUSTER VALIDATION

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Department * demographic	113	96.6%	4	3.4%	117	100.0%
Job Tenure * demographic	113	96.6%	4	3.4%	117	100.0%
Industry Tenure * demographic	113	96.6%	4	3.4%	117	100.0%
Gender * demographic	113	96.6%	4	3.4%	117	100.0%
Age * demographic	113	96.6%	4	3.4%	117	100.0%
Education * demographic	113	96.6%	4	3.4%	117	100.0%

Crosstab

Count

		demographic		Total
		CL1	CL2	
Department	GM/AGM	25	2	27
	Revenue Management	26	9	35
	Sales/Marketing	5	21	26
	Rooms Division	3	22	25
Total		59	54	113

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	52.016[a]	3	.000
Likelihood Ratio	58.465	3	.000
Linear-by-Linear Association	47.243	1	.000
N of Valid Cases	113		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 11.95.

Crosstab

Count

		demographic		Total
		CL1	CL2	
Job Tenure	Less than 1 year	1	7	8
	1-5 years	15	35	50
	6-10 years	23	12	35
	11-15 years	9	0	9
	More than 16 years	11	0	11
Total		59	54	113

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	35.806[a]	4	.000
Likelihood Ratio	44.311	4	.000
Linear-by-Linear Association	33.326	1	.000
N of Valid Cases	113		

a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is 3.82.

Crosstab

Count

		demographic		Total
		CL1	CL2	
Industry Tenure	Less than 1 year	0	3	3
	1-5 years	0	13	13
	6-10 years	5	28	33
	11-15 years	13	9	22
	More than 16 years	41	1	42
Total		59	54	113

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	70.770[a]	4	.000
Likelihood Ratio	89.140	4	.000
Linear-by-Linear Association	65.958	1	.000
N of Valid Cases	113		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 1.43.

Crosstab

Count

		demographic		Total
		CL1	CL2	
Gender	Male	35	26	61
	Female	24	28	52
Total		59	54	113

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.417[a]	1	.234		
Continuity Correction[b]	1.003	1	.317		
Likelihood Ratio	1.419	1	.233		
Fisher's Exact Test				.261	.158
Linear-by-Linear Association	1.405	1	.236		
N of Valid Cases	113				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 24.85.

b. Computed only for a 2x2 table

Crosstab

Count

		demographic		Total
		CL1	CL2	
Age	34 years old or younger	1	29	30
	35-44 years old	15	20	35
	45-54 years old	30	5	35

	55 years or older	13	0	13
Total		59	54	113

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	57.596[a]	3	.000
Likelihood Ratio	71.150	3	.000
Linear-by-Linear Association	55.159	1	.000
N of Valid Cases	113		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.21.

Crosstab

Count

		demographic		Total
		CL1	CL2	
Education	High school	2	6	8
	Some college	5	12	17
	College graduate	37	32	69
	Graduate degree	15	4	19
Total		59	54	113

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.414[a]	3	.010
Likelihood Ratio	11.987	3	.007
Linear-by-Linear Association	10.619	1	.001
N of Valid Cases	113		

a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is 3.82.

APPENDIX K: HUMAN AGENCY DISCRIMINANT ANALYSES

Group Statistics

demographic		Mean	Std. Deviation	Valid N (listwise)	
				Unweighted	Weighted
CL1	Department	1.7627	.81662	59	59.000
	Job Tenure	3.2373	1.08816	59	59.000
	Industry Tenure	4.6102	.64372	59	59.000
	Gender	1.4068	.49545	59	59.000
	Age	2.9322	.73963	59	59.000
	Education	3.1017	.68720	59	59.000
CL2	Department	3.1667	.84116	54	54.000
	Job Tenure	2.0926	.59140	54	54.000
	Industry Tenure	2.8519	.83344	54	54.000
	Gender	1.5185	.50435	54	54.000
	Age	1.5556	.66351	54	54.000
	Education	2.6296	.78419	54	54.000
Total	Department	2.4336	1.08460	113	113.000
	Job Tenure	2.6903	1.05288	113	113.000
	Industry Tenure	3.7699	1.14960	113	113.000
	Gender	1.4602	.50063	113	113.000
	Age	2.2743	.98423	113	113.000
	Education	2.8761	.76919	113	113.000

Tests of Equality of Group Means

	Wilks' Lambda	F	df1	df2	Sig.
Department	.578	80.978	1	111	.000
Job Tenure	.702	47.020	1	111	.000
Industry Tenure	.411	159.013	1	111	.000
Gender	.987	1.410	1	111	.238
Age	.508	107.717	1	111	.000
Education	.905	11.627	1	111	.001

Log Determinants

demographic	Rank	Log Determinant
GM/AGM/RM/MoreExperienced/Educated/Older	6	-4.236
Sales/Mkt/Rooms/LessExperienced/Educated/Younger	6	-5.016
Pooled within-groups	6	-4.195

The ranks and natural logarithms of determinants printed are those of the group covariance matrices.

Test Results

Box's M		45.854
F	Approx.	2.057
	df1	21
	df2	44558.890
	Sig.	.003

Tests null hypothesis of equal population covariance matrices.

Eigenvalues

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	2.705[a]	100.0	100.0	.854

a. First 1 canonical discriminant functions were used in the analysis.

Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.270	141.439	6	.000

Standardized Canonical Discriminant Function Coefficients

	Function
	1
Department	-.443
Job Tenure	.189
Industry Tenure	.538
Gender	.033
Age	.465
Education	.140

Structure Matrix

	Function
	1
Industry Tenure	.728
Age	.599
Department	-.519
Job Tenure	.396
Education	.197
Gender	-.069

Pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions

Variables ordered by absolute size of correlation within function.

Large mean differences between CL1 and CL2 suggest of good discriminators. Strong statistical evidence of significant differences between means of Cluster 1 and Cluster 2 were found for all independent variables except Gender variable. Then, the log determinants appeared similar each other and Box's M was found to be significant. Yet, a significant result is not regarded as too important with large samples. In addition, a canonical correlation of .854 suggests the model explains 72.9% of the variation in the grouping variable. Lastly, Wilks' lambda indicates the significance of the discriminant function and a highly significant function is observed with 27% of total variability not explained. In particular, the discriminant coefficients indicated the importance of each predictor. Industry Tenure score was the strongest predictor, followed by Age which strongly contribute to allocating the data to CL1 or CL2. Gender was less successful as predictors.

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