COST ALLOCATION AND MARKET SEGMENT POFITABILITY

ANALYSIS IN THE LODGING INDUSTRY

By

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Dedication

This dissertation is dedicated to my son Tarkan Karadag

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"You will never be greater then the vision that guides you."

Every morning in Africa, a gazella wakes up. It knows that it must run faster than the fastest lion or it will be killed. Every morning a lion wakes up. It knows that it must out run the slowest gazelle or it will starve to death. It doesn't matter whether you are a lion or a gazella: When the Sun comes up you had better be running.

It is said that a thousand-mile journey starts with a single step. Cihan Cobanoglu, my old colleague gave me a boost of confidence to start a doctorate program at OSU and guided me at the beginning of this step. Dr. Patrick J. Moreo, the department head of HRAD inspired, motivated and encouraged me to walk on this road. The faculty members of HRAD, Dr. Hailin Qu, Dr. Jerrold Leong, Dr. Bill Ryan, Dr. Lynda Martin, Dr. Woody Kim and other OSU faculty members whom I have taken classes from, enlightened the way of my journey. Dr. Woody Kim, my dissertation advisor directed me, guided me, helped me and showed a great patience to reach the last step of this journey.

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CHAPTER I

INTRODUCTION

1.1 Overview

As companies become increasingly customer oriented, the profitability derived from the customer is becoming more important than the profitability of products or departments. In the present economic environment, marketing success depends more on generating maximum profits from customers than maximizing sales to those customers. Marketers use financial and non-financial tools to evaluate the performance of marketing activities. Customer profitability analysis (CPA) provides an important future direction in business success by enabling the analysis and measurement of customer contribution and leading to strategic marketing decisions. It is crucial for any business owner or manager to know where their business is making money and where they are not. CPA highlights the importance of knowing which customers or market segments have a positive contribution to the bottom line of a company and which do not. Collins (2001) noted that without understanding customer profitability, companies do not really know how to target appropriate sales, marketing and service opportunities.

In order to make critical marketing decisions, it is important that marketing managers are equipped properly with all relevant financial and non-financial information. Information on the profitability of customers is regarded as one of the most important types of information (Howell & Soucy, 1990; Bellis-Jones, 1990). CPA enables marketing managers to evaluate the performance of current marketing activities and make decision for the future strategies. Furthermore, in today's business environment, business managers can no longer successfully manage their business based on traditional accounting measures. Challenges like globalization, increased competition, shrinking profit margins, and diminished customer loyalty demand new accounting approaches like customer profitability analysis (CPA). Customer profitability analysis highlights the need for management accounting systems to shift from traditional product cost emphasis to a stronger focus on the measurement of the profitability of individual customers, market segments or channels. While customer profitability analysis is widely discussed in the literature, it has not yet benefited the lodging industry, except for a few recent applications.

Previous studies have shown that once full cost of supporting customers is taken into account, the majority of customers (around 70 %) are not profitable at all. In fact the studies carried out by Cooper and Kaplan (1991) have led them to the so-called 20-225 rule, which states that in some companies 20% of customers account for 225% of profit and the other 80% lose 125% of profit. Other researchers have found different profitability margins on customers. For example, Storbacka (1997) found that more than half of the customers are unprofitable. Niraj, Gupta and Narasimhan (2001) claim that the loss on a customer could be as high as 2.5 times of sales revenue.

Although customer profitability information is important to all industries, it assumes more importance in the lodging industry than even the product or department profitability. This is because of the costs of providing a service in lodging is usually determined by customer behavior (Kaplan & Narayanan, 2001). Wyner (1999) claims that some hotel customers are more profitable than others are. One way to deal with these situations is to invest in understanding customer revenue and cost of serving information through CPA. Nordling and Wheeler (1992) found that while one hotel customer segment has 30 % of net contribution to the bottom line of a property, the other has only two percent. Once customers have been differentiated according to their net contribution to the bottom line, marketing strategies can be developed and addressed on customers that are more profitable.

Accounting executives generally share the belief that CPA will be a far more important work activity in the future, (Siegel, Kulesza & Sorenson, 1997) as companies will pay more attention to customer retention and long-term customer relationship (Reichheld *et al.*, 1990; Fornell & Wernerfelt, 1987; Selnes, 1992). Selden and Colvin (2002) highlighted the importance of customer profitability:

> "Boards of directors will soon begin to demand customer-profitability data and will challenge management to act on it; investors will demand that companies report it."

1.2 Background of the Study

Customer profitability analysis (CPA) is a primary input into the marketing decision process. Using accounting information to measure marketing performance by segment has been advocated since the late 1920's (AAA, 1972). The need for a formal analysis approach to market segment profitability was first articulated by the American Accounting Association (AAA) in 1972. In a comprehensive study, "The committee on Cost and Profitability Analysis for Marketing" of the AAA prepared a report setting forth appropriate costs and revenue concepts and reporting techniques for planning, control and decision making in marketing. The committee made the following statement to highlight the importance of market segment analysis:

> "Under the modern marketing concept, decision making is to focus on customer. Marketers need better financial measures to assess the economical contribution of their customers to the firm's bottom line."

Customer profitability has been explored by academics since 1970's in accounting, marketing and hospitality literature from different perspectives. Management accounting researchers have been interested in understanding the process of factors that drive customer service costs, profitability and using this information for better management and control of customer services and related operations (Shields, 1997). Marketing researchers mainly focused on the benefits, implementations and implications of customer profitability analysis and how to develop better tactical and strategic marketing policies based on the findings of profitability analysis.

In the hospitality literature, many authors emphasized the importance of customer profitability analysis in terms of developing better marketing policies for different market segments. While some authors used simulation techniques (Dunn & Brooks, 1990; Quain, 1992) to explain the model, others used case studies (Noone & Griffin, 1997; 1998) to explain how a profitability analysis model explains the profit margins between different market segments along with yield management techniques.

Existing literature provides wide discussion and measurement techniques for customer profitability or market segment profitability analysis. According to Goebel, Marshall and Locander (1998), CPA measurement techniques can be examined in two ways: (1) Volume-based allocation, and (2) Transactional based allocation. While volume-based approach reflects the practices of traditional accounting methods, the transactional based uses activity-based costing method (ABC) as the allocation base. A brief examination of the literature shows that most of the articles published after 1990's supported the activity-based costing approach for customer profitability analysis (e.g., Foster, Gupta & Sjoblom, 1996; Noone & Griffin, 1997, 1998; Selnes, 1992; Juras & Dierks, 1993). Other articles published before the 1990's supported traditional volume based allocation techniques (Mossman, Fischer & Crissy, 1974; Pagano, 1975; Warner, 1979; Nordling & Wheller, 1992).

A more direct bridge to the development of customer profitability analysis for the strategic management decisions in application was provided by commercial banks in the 1970's. Many U.S. banks developed some sort of analysis techniques to assess the profitability of a customer or customer groups. According to the Meridian Research Report (Halperin, 2001), large commercial banks spent more on customer profitability solutions than has any other industry, with an estimated compound annual growth rate of 20 % through 2005. The Gartner Group Study (Halperin, 2001) reveals that three quarters of banks with more than $4 billion in deposits were calculating current customer profitability by the end of 1999, and almost all planned to do so by the end of 2000.

1.3 Problem Statement

The existing accounting practices suggested by the Uniform System of Accounts for the Lodging Industry (USALI) makes it difficult to determine the actual costs of serving specific customers or market segments. On the other hand, marketing people focus on marketing operation and different market segments. Current financial statements do not enlighten marketing managers in the decision-making process about how to maintain the current pricing or costing system in terms of supporting market segment related decisions. Determining which market segments do really have a positive contribution to the bottom line is not known. The USALI principles were oriented towards department profitability and overall hotel operation. However, market oriented decisions require analysis of market segments which lodging properties serve. This, in turn, requires new accounting practices such as market segment profitability analysis (MSPA). It is clear that without sophisticated accounting systems, it is not possible to accurately identify costs relevant to each market segment (Burgess & Bryant, 2001). Therefore, lodging companies need exceptional accounting systems to support marketing strategies to find and retain customers who deliver maximum profitability to the business. MSPA enables lodging managers to analyze customer segments in terms of profitability, evaluate the current marketing policies, and make future decisions that improve the current marketing practices. Therefore, marketers need a true yardstick to improve the efficiency of a lodging operation.

While the existing literature provides a large amount of research for the usefulness of MSPA there is no evidence that this model has benefited the lodging industry, except a few recent applications. Furthermore, regardless of the common agreement of the inadequacy of the current accounting systems, no researcher questioned the existing accounting systems supported by an empirical study from the marketers' and controllers' point of view. Lodging accounting systems are questioned in terms of providing valuable information to the decision makers. The main interest of this study is to provide a new insight to the researchers and industry practitioners from the marketers' and controllers' point of view. It can be said that much comprehensive insight is needed to understand what current accounting systems provide for and what marketing managers expect from the existing accounting systems to make better decisions to increase the profitability of each market segment.

1.4 The Purpose and Objectives of the Study

The purposes of this study are to:

1. Evaluate the existing accounting, marketing and hospitality literature linking research issues related to MSPA,
2. Describe how marketing professionals evaluate the accounting information provided by the current accounting systems in marketing decisions related to MSPA,
3. Compare the perception of marketers and controllers on the MSPA issues, and
4. Discuss future research directions in light of accounting and marketing applications

Under the above considerations the research objectives of this study are to:

1. Find the level of agreement between marketers and controllers concerning the full cost allocation among different market segments.
2. Compare the potential and existing value of the accounting information as perceived by the marketers used in marketing decisions.
3. Find the importance and frequency of use of specific accounting tools in marketing decision-making related to market segment profitability analysis.

4. Find the importance and frequency of use of specific accounting tools in marketing decision-making related to market segment profitability analysis.
5. Compare hotel marketers' and hotel controllers' perceptions on market segment profitability issues.

1.5 Research Questions

The research questions of this study can be summarized as follows:

1. What is the level of agreement of marketers and controllers on the cost allocation among market segments?
2. What is the current usage of methods to measure the profitability of each market segment of the lodging properties?
3. What are the reasons for not using market segment profitability analysis?
4. How do marketers value the accounting information that is provided by the current accounting systems for marketing decisions?
5. What are the most and least profitable market segments in the industry?
6. What is the importance and frequency of use of specific accounting tools in marketing decisions related to market segment profitability?
7. What are the perceptions of marketers and controllers on the market segment profitability issues and the structure of current accounting system?

1.6 Hypothesis

H_{A1} = Current practices of market segment profitability analysis is different between marketers and controllers.

H_{A2}= The potential and existing value of the accounting information used in marketing decisions differs as perceived by hotel marketers.

H_{A3}= The importance and frequency of use of the accounting information is different as perceived by marketers.

H_{A4}= The perception of marketers and controllers do not differ on market segment profitability issues.

1.7 Significance of the Study

This study will have theoretical and practical contributions as follows:

1.7.1 Theoretical Contribution

Currently, there is a dearth of comprehensive research study in the lodging industry assessing the value of current accounting systems in terms of generating useful accounting information for marketing decisions, especially as related to evaluating the profitability of each market segment. This study will provide a useful framework for future researchers, by exploring deficiencies of the current accounting systems in marketing decisions. This study will guide other researchers in understanding the current MSPA measurement methods and how U.S. lodging marketing managers evaluate existing accounting systems for marketing efforts and use of specific accounting tools to support marketing related decisions.

1.7.2 Practical Contribution

The information about which customer groups are more profitable to the bottom line of a hotel property will enable lodging managers to review the customer mix from a profit perspective. Further, it will aid the identification of more profitable market segments and, in turn, manage room capacity, service and product diversity over a long-term horizon. These will improve the total profitability of a lodging property through (Schnoebelen and Skillern, 1996):

1. Business process modifications
2. Revisions to services and products offered
3. Altering, adding or dropping some services provided to guests
4. Setting prices for different purposes and for different periods
5. Observe profitable market segments and re-organize marketing activities

By assessing the sales volume and profit differentials among market segments, marketing managers will focus more on tracing profitability and less on sales. If marketers adopt the practice of segment profitability analysis methods, a most likely consequence will be that they start to focus more on the relationship between marketing effort and profitability. Implementation of activity-based costing and MSPA in a hotel property will enable managers to identify more profitable customer groups and aid targeting of future marketing resources.

1.8 Definition of Terms

The followings are some terms and definitions used in this study:

Accounting System: A system used to identify, analyze, measure, record, summarize, and communicate relevant economic information to interested parties (Ainsworth, *et al.*, 1997).

Activity Based Costing (ABC): A cost accounting system that uses both unit and non-unit-based cost drivers to assign costs to cost objects by first tracing to activities and then tracing costs from activities to products (Hansen, D. & Mowen, M. (1997). 2.ed.; Cost Management. Cincinnati, OH: South-Western College Publishing.

Controllers: In this study "controllers" are defined as the financial professionals, who were in charge of the accounting departments of individual lodging properties.

Cost: Resources sacrificed or forgone to achieve a specific objective (Horngren, Foster & Datar, 1997).

Cost Allocation System: System for assigning indirect costs to the chosen cost object (Horngren, Foster & Datar, 1997).

Customer Profitability Analysis (CPA): CPA is a technique that examines revenue, costs and profits by individual customer or customer group (Noone & Griffin, 1999).

Fixed Budget: A budget which is made without regard to potential variations in business activity

Flexible budget: A set of revenue and expense projections at various production or sales volumes.

Fixed costs: A cost that does not vary depending on production or sales levels, such as rent, property tax, insurance, or interest expense.

Indirect Costs: Undistributed operating expenses plus fixed charges (Geller & Schmidgall, 1980).

Marketers: In this study "marketers" are defined as the professionals who are in charge of sales/marketing departments of individual lodging properties.

Market Segment: A market segment is an identifiable component group of an overall market whose members have something in common, and to which a specific service appeals.

Market Segment Profitability Analysis (MSPA): A flexible management tool that identifies each segment of revenue, cost and profitability within a lodging property by the market segments (Nordling & Wheller, 1992).

Marketing Mix: The 'tools' or means available to an organization to improve the match between benefits sought by customers and those offered by the organization.

Product/Services: The terms "products" or product/services(s) are used interchangeably. The term service(s) is used to mean only those general retail services that include lodging/hospitality services.

Segment Profitability Analysis: Another definition of customer profitability analysis.

Segment Revenue: Segment revenues are inflows of assets from segmented customers received in exchange for products or services being provided to those customers.

Strategic Marketing Decision: Decision made for the period of 1 year or more.

Operational Marketing Decisions: Decisions made for 1 to 12 months.

Variable Costs: Costs of an organization that vary with the amount of work performed.

CHAPTER II

REVIEW OF LITERTAURE

2.1 Overview

The concept of customer profitability analysis has been reviewed in the academic literature since the late 1920's. In the 1960's, the discussion became more intense in the marketing literature. However, the first comprehensive study on the market segmentation and profitability issue was conducted by the American Accounting Association in 1972. From conceptual development until 2000's, customer profitability has attracted many industries, such as banking, retailing and manufacturing. Today, market segment profitability analysis (MSPA), or in other words customer profitability analysis (CPA), became a popular method in many industries in terms of measuring the contribution of a single or different customer groups to the bottom line of a company. However, some industries use the model less intensively than other industries due to some conceptual and practical limitations as explained at the end of this chapter.

In the first section of this chapter, the issues of customer profitability analysis in the marketing, accounting and hospitality literature will be addressed. In the second section, the importance of segmentation as an element of the CPA model will be emphasized. The third section will discuss the importance of customer profitability and the need of MSPA in marketing decisions. In the section four, the measurement issue of customer profitability as a traditional model and an activity-based costing model will be discussed. Finally, in the fifth section some important factors that prevent the common applications of MSPA will be pointed out.

2.2 Customer Profitability Analysis: A Historical View

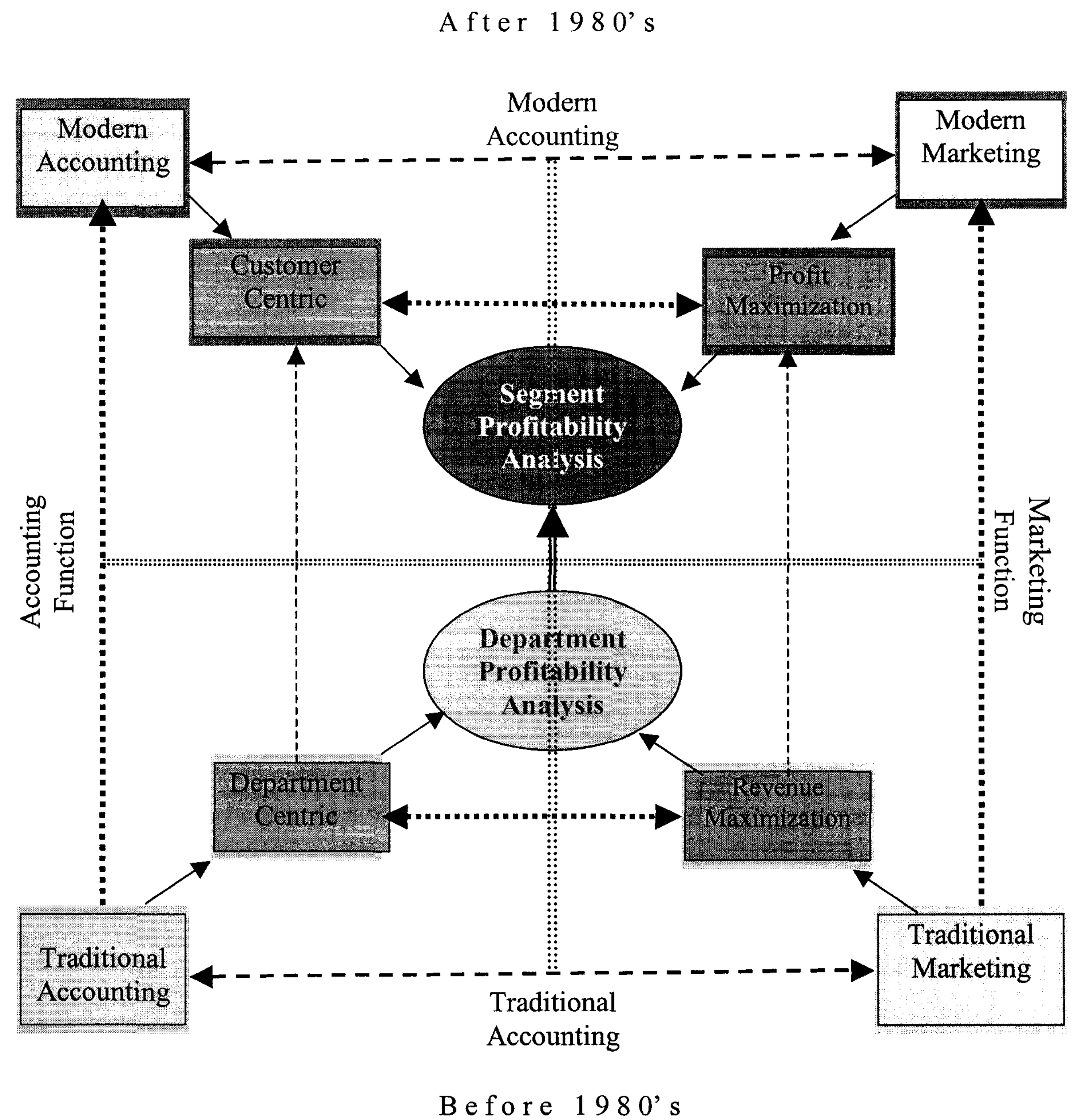
Although many articles such as Beik and Buzby (1973), Kirpalani and Shapiro (1973), Pagano (1975), and Warner (1979) have been published in marketing and in accounting literature, customer profitability analysis did not receive much attention until the late 1980's and early 1990's. It is with the advent of customer databases in the late 1980's and early 1990's that attention to customer profitability came to the front. The notion that some customers were contributing more than others to the bottom line of a company regardless of their balances seemed intuitively correct. Additionally, the desire to target marketing to households rather than to individuals supported the notion (Sutherland, 2001).

Early literature on customer profitability analysis focused on the use of first generation analysis (Foster & Gupta, 1994) for a short term of one year only, and the analysis was too simplistic critics argued. However, other authors suggested moving to second-generation analysis, which was regarded as 'lifetime customer profitability analysis' (Foster, Gupta & Sjoblom, 1996; Foster & Gupta, 1994; Storbacka, 1993).

CPA applications were created by the needs of the modern business era. From the industrial revolution to 1980's, most accounting practices focused on product or departmental profitability since the manufacturing product was the main subject of the traditional accounting system. Profits were high in the past and revenue maximization was the primary concern of the marketing strategies in many industries. From the traditional marketing point of view, the most important behavior was to maximize revenue of a customer or customer segments. However, modern marketing approach has brought new idea along with the changes in the business and introduced companies with new management accounting techniques such as CPA.

In the 1980's, increased competition and shrinking profit margins have forced companies to change their management and marketing strategies. Companies became more customer and service oriented and they changed their management focus from being "productcentric" to being "customercentric" (Salomaa, 2001). This change has brought many new accounting applications and new marketing approaches in many areas of industry. Therefore, companies have changed their traditional accounting practices, since the new competitive environment required much more accurate cost and performance information on the organizations' products, services and customers. This is specifically true for the lodging industry since the lodging industry accounting principles are based on the Uniform System Accounts for the Lodging Industry (USALI) principles. USALI measures the performance of a lodging property department by department as revenue and cost centers.

The following Figure 1 has been conceptually developed based on the historical improvement of accounting and marketing functions. The figure integrates the approaches and applications of marketing and accounting in both traditional and modern ways in the lodging industry.



Source: Developed by the author

Figure 1: Functional Integration of Accounting and Marketing with Traditional and Modern Approaches in the Lodging Industry.

2.3 Customer Profitability: Concept and Terminology

In the academic journals, many different terms have been used for customer profitability analysis. Although the basis of customer profitability is similar across different authors, several terms have been used in academic publications in defining, explaining or developing the concept of customer profitability analysis models.

The following Table 1, gives a chronological list of different authors and the terms used by them. As seen from the table, the most common term used in the literature is the "Customer Profitability Analysis." However, it was preferred to use the term of "Market Segment Profitability Analysis" in this study, since this term reflects a more realistic approach of actual market segmentation in the lodging industry. This term was used initially by Dunn and Brooks (1990) who were the first researchers of the article published on the market segment profitability analysis in the lodging industry.

Table 1: Customer Profitability Analysis and Similar Concepts Used in the Literature

Authors	Terms Used
American Accounting Association (1972)	Profitability Analysis for Marketing
Beik and Buzby (1973)	Profitability Analysis by Market Segments
Kirpalani and Shapiro (1973)	Contributing Accounting for Segment Analysis
Pagano (1975)	Measuring Customer Profitability
Levine (1978); Bellis-Jones (1989); Howell and Soucy (1990); Malcolm (1993); Smith and Dikolli (1995); Zaman (1995); Foster, Gupta and Sjoblom (1996) Noone and Griffin (1997,1998,1999) Soderlund and Vilgon (1999); Mulhern (1999); Burges and Bryant (2001); Raaij, Vernos and Triest (2003)	Customer Profitability Analysis
Ward (1979, 1987)	Segment Profitability
Warner (1979)	Customer Profitability Statement
Nordling and Wheller (1992)	Market Segment Accounting
Quain (1992)	Sales Mix Profitability
Dunn and Brooks (1992)	Market Segment Profit Analysis
Ward (1995)	Segment Profitability Analysis
Schnoebelen and Skillern (1996)	Measuring Customer Profitability
Selnes (1992); Booth (1994); Petty and Goodman (1996); Hartfeil (1996); Storbacka (1997); Wyner (1999); Niraj, Gupta and Narasimhan (2001); Jacobs, Johnston and Kotchhetova (2001)	Customer Profitability
Kaplan and Narayanan (2001)	Customer Profitability Measurement
Libai, Narayandas and Humby (2002)	Segment Based Approach to Customer Profitability

Source: Organized by the author

2.4 Customer Profitability Analysis in the Literature

2.4.1 Customer Profitability Analysis in the Marketing Literature

The concept of customer profitability has conceptually developed based on the marketing research. Therefore, this section of the literature review deals with the marketing literature regarding the CPA. Profitability analysis in the marketing literature has been discussed in academic publications since 1960's (Sevin, 1965; Shapiro, Rangan, Moriarty & Ross, 1987; as cited in Selnes, 1992). In marketing literature, few studies have provided sophisticated analysis of customer profitability.

A few authors need to be mentioned in this context. Berger and Nasr (1998) provided a structural modeling aspect for constructing profitability models. Storbacka (1998) described customer profitability as a central aspect of relationship marketing, and provided some measures for evaluating the distribution of profitability across customers. Mulhern (1999) emphasized the role of customer profitability analysis for developing marketing strategies and marketing related decision-making. Niraj, Gupta and Narasimhan (2001) developed a general model and measurement methodology to relate customer profitability to customer characteristics in a supply chain.

Thus, in the literature, attempts to build customer profitability models have usually been in a direct marketing context (Berger & Nasr, 1998; Mulhern, 1999) in which customer profitability is evaluated solely on the transactions between the direct marketing and the customer. There is much less of a tradition in this literature that considers the cost side of profitability in marketing performance evaluation.

However, this area needs further explanation. Several authors have established the importance of conducting a profitability analysis for customers. (eg., Foster, Gupta & Sjoblom, 1996; Selnes, 1992). Selnes (1992) pointed out the problem as:

> "We believe that there are several important aspects of the problem raised in market profitability analysis that call for more research. One major issue is related to the design of management information systems ads in particular what influence marketing considerations have or should have. Another issue is the degree of cooperation and mutual understanding within the management team. Research is also needed on what information marketers actually use, and further how this relates to the performance or productivity or efficiency analysis."

2.4.2 Customer Profitability Analysis in the Accounting Literature

One aspect of management that has dealt with the question of quantifying customer profitability is accounting. Especially, the measurement issue of customer profitability is the focus of accounting. Hence, it is necessary to understand the research direction conducted in the accounting field related to customer profitability analysis.

The first comprehensive study in the accounting literature was conducted by the "Committee on Cost and Profitability Analysis for Marketing " established by the American Accounting Association Committee in 1972. The task of the committee was to prepare a report setting forth appropriate cost and revenue concepts and reporting techniques for decision making in marketing. Following this, Beik and Buzby (1973) published the first article on market segment profitability with the title of "Profitability Analysis by Market Segments" and exhibited a Segment Productivity Analysis – with Contribution Approach.

Several authors continued exploring the issue. Pagano (1975) illustrated a customer profitability analysis statement in a bank environment. Levine (1978) exhibited a customer profitability analysis statement in a bank environment and suggested four models to find the net contribution of a customer as follow: (a) Gross profit to net fund used (b) Net profits to net fund used (c) Net profit to gross amount borrowed (d) Net profit to allocated capital. Warner (1979) emphasized the importance of cost information of customers and usefulness of customer profitability information for marketing decisions. Warner (1979) noted that product costing is the common focus of management information and customer costing is rarely provided.

Some systematic research conducted in this area is worth noticing. A survey of 300 American and Australian general managers and accounting/finance managers conducted by Foster and Young (1997), found "customer profitability" to be the "single most important current management priority." Some widely used management accounting texts have also has placed greater emphasis on the importance of customer profitability (Horngren *et al.*, 2003; Hilton, Maher & Selto, 2003; Coltman, 1998; Hansen & Mowen, 1997). Shapiro *et al.* (1987) argued, "manage customers for profit (not just sales)." They noted that many managers seldom consider the magnitude, origins and managerial implications of profit dispersion and suggested managing costs to suppliers, customer behavior and management of customers could help to determine customer profitability.

In the accounting literature, many case studies or conceptual development papers have appeared in the banking industry. The main targets of bank customers were individual or institutional customers and profits generated from these subjects. This might be the main reason why many of the articles have been written in the banking industry. In order to meet customer needs a bank must have raw information processing systems in its database to measure customer profitability. Hartfeil (1996) noted that a "Bank With 200,000 accounts can easily house a customer profitability database on a $7,000 personal computer, but banks with 20 million accounts could spend much more than $700,000 on the right file server."

There are many published articles in the accounting literature that explains the importance of CPA and how customers or customers segments have different contribution margin to the bottom line of a business organization. According to Hartfeil (1996), vice president and director of customer information and analysis at Bank One Corporation, in Columbus, Ohio, "Products are not profitable; customers are. When we analyzed our customer base, segment by segment, we found that each required a different strategy to maximize its profitability to the bank." He also noted the importance of the need to measure profitability by the customer as about 20 % of the customers account for more than 100% of profits (Hartfeil, 1996). The Chief Financial Officer (CFO) of the First National Bank Dakota stated that, only 10 % of bank customers, both individual and commercial, accounted for virtually all of its profitability. This experience is not unique. Richard Bell, a senior research analyst of a financial-services technology firm (as cited in Whitting, 1999) stated that "Within the financial service industry, only about 20% to 30% of customers are generally profitable."

2.4.3 Customer Profitability Analysis in the Hospitality Literature

Customer profitability analysis studies in the hospitality area focused on either in model development or implementing a model in a case study text. More interestingly, two of the important studies (Dunn & Brooks, 1990; Quain, 1992) that illustrated a model development were published by industry professionals, not by academicians.

Dunn and Brooks (1990) introduced the Customer Profitability Analysis in the hospitality literature in the form of Market Segment Profitability Analysis (MSPA). They developed a model that links the financial and marketing goals by reporting revenue and expenses by market segments. They suggested hotels to employ MSPA for profit maximization rather than revenue maximization. In the model, they used activity-based costing (ABC) approach to distribute the expenses from cost centers to activity centers. They claimed that cost centers support specific activity centers and a given activity center incurs costs for particular market segments.

The second model development study was done by Quain (1992). He developed a simulation model for a theoretical 300-room full service hotel property. He named his model as Profit Analysis by Market Segment (PABS) and illustrated the revenues generated by different market segments and the contribution margin of each segment to the bottom line. PABS uses a combination of marketing information and cost analysis. It identifies average revenues generated by different market segments, and then delves into the contribution margin for each of those segments by considering the cost of making those sales. He advised that marketing decisions should consider the following: (1)

revenues associated with those market segments, (2) costs associated with those market segments, and (3) clients' buying habits for making sound marketing decisions.

Nordling and Wheller (1992) documented the implementation of CPA at the Hilton property at Las Vegas, which they named "Market-Segment Accounting," which overleaps with the same concept of Market Segment Profitability Analysis or similar approaches. They stated that the reason why they developed such a model was that the current accounting methods did not answer some of the most fundamental questions about the business. After developing the model and applying the data to the Las Vegas Hilton property, they realized that while one of the segment's net profit contribution was 30% to the bottom line, the other was only 2%. This has resulted a fundamental change in the Las Vegas Hilton's marketing policy and marketing related decisions.

Noone and Griffin (1998) proposed a systematic approach to the implementation of CPA in a hotel environment that uses activity-based costing (ABC) in the assignment of costs to customer segments. In 1999, the same authors (Noone & Griffin, 1999) implemented this model in a 90-room hotel property located in the center of Dublin city in Ireland. According to the results of the system implementation they found that while 38% of the revenue base at the site was generating a profit equivalent to 137% of the total profits, with 30% of the revenue base generating a negative profit contribution equivalent to 63% of total profits.

Table 2 summarizes the primary research studies according to the authors, the area of study, and summary statements of the research published in different academic journals.

Table 2: A Summary of Market Segment Profitability Analysis Studies in the Literature

Authors(s)	Industry or area	Summary of results
Warner, W.A."Costing for Customers" (1979).	General	Concept development, customer profitability statement and use of customer profitability information in marketing decision process.
Petro, Thomas M. "Who Are Your Best Customers?" (1990).	Banking	Emphasizing on the profitability measurement of bank customers.
Selnes, Fred. "Analysis Marketing Profitability: Costs are a Dangerous Cost-Driver" (1992).	General	Emphasizing on product profitability, customer profitability, and allocating costs.
Smith, Malcolm. "Profitability Analysis Revisited" (1993).	General	Emphasizing customer profitability vs. product profitability and customer related strategies.
Costanzo, Chris. "Getting Serious About Customer Profitability" (1995).	Banking	The importance of customer profitability and the contribution of profitable vs. unprofitable customers.
Smith, Malcolm and Shane Dikolli. Customer Profitability Analysis: An Activity-Based Costing Approach" (1995).	General	Discuss the patterns of profitable and unprofitable customer characteristics and importance of ABC with CPA.
Petty J. and Goodman K."Customers From Hell: Are they Worth the Effort" (1996).	General	Emphasizing customer profitability analysis using activity-based costing and determine the level of CPA as, order level, customer level and market segment level.
Schnoebelen, Steve and Don Skillern. "Measuring Customer Profitability" (1996).	Textile and apparel industry	Cost-to-serve can be best calculated by using ABC methods. Conventional cost accounting methods do not properly identify differences in costing (ABC) comes in.
Dolan, Pat and Karen I. Schreiber. "Finding and Developing Profitable Customers". 1997.	General	Focuses on identifying profitable and unprofitable customers, taking advantage of opportunities and making more money.
Noone, Breffni and Peter Griffin. "Enhancing Yield Management with Customer Profitability Analysis" (1997).	Lodging	CPA will give management ancillary spend and cost information that will enhance customer mix decisions over a long-term horizon.
Jacobs, Fred A, Wesley Johnston and Natalia Kontchetova. "Customer Profitability: Prospective vs. Retrospective Approaches" (2001).	General	Developing a comprehensive model for customer profitability
Sutherland, Kim. "Making Customer Profitability Worth" (2001).	Banking	Given information about how customer profitability analysis is very important for banking industry.

2.5 Market Segmentation

2.5.1 Utility of Market Segmentation

Customer profitability analysis has always considered market segmentation as the basis of developing its model. In this section, literature about market segmentation will be considered to find trends and directions in market segmentation and its utility.

Market segmentation is the division of a market into distinct groups of buyers who might require different products or marketing mixes (Kotler, 1994). It is the division of a heterogeneous market, consisting of buyers with different needs and wants. This technique is widely accepted as one of the requirements for successful marketing. By dividing the market into relatively homogenous subgroups or target markets, both strategy formulation and tactical decision-making can be more effective. Market segmentation is used as a strategic marketing tool for defining markets and thereby allocating resources.

Segmentation has attracted attention of several researchers. Beik and Buzby (1973), Myers (1996), and Bowen (1998) defined market segmentation as one of the most important strategic concepts contributed by the marketing discipline to business firms and other types of organizations, and highlighted the importance of segmentation in terms of strategic marketing decision. Berry (1995) stated that market segmentation is a powerful tool used by successful consumer product companies for many years and segmentation should assist firms to get, build and keep profitable relationships. According to Guiltinan and Paul (1991), market segmentation is one of the corner stones of marketing management approach. The starting point in this approach is the identification of the relevant market that the company is serving similar needs and/or characteristics that are likely to exhibit similar purchase behavior (Weinstein, 1994).

Customer segmentation is the principal basis for allocating resources to products/services to develop marketing programs. Cahill (1997) emphasized the importance of market segmentation in terms of developing and communicating with customers' in a language that they can understand. This is what Yavitz and Newman, 1982 (as cited in Cahill, 1997) have called: "the right person and the right carrot" in other words, the correct segment of customers and the correct offering. Market segment is the final link in the value chain and the ultimate target of all other firm activities up to this point (Goebel, Marshall, & Locander, 1998).

Segmentation can also affect managerial decisions in the business organizations. To have value for managerial decisions, Bell (1972) noted that market segments should: (1) be readily identified and measured, (2) contain adequate potential, (3) demonstrate effective demand, (4) be economically accessible, and (5) react uniquely to marketing effort.

Segmentation, the dividing of a total market into its component parts by some scheme, is not new (Cahill, 1997). First expressed by Smith in 1956 (as cited in Beik and Buzby, 1973) the concept of market segmentation has since been elaborated in many different ways. Market segmentation, which has been successfully applied to marketing decision making for over fifty years, can trace its roots back to the great surge in consumerism that followed World War II. The concept really came of age after the wartime economy had successfully converted to peacetime production (making cars instead of tanks), and once scarce consumer products such as refrigerators and toasters were now showing a surplus. Thus, marketing decisions have also being affected by market segmentation.

2.5.2 Defining Customer Segments

Since every organization has its own manner of segmenting customers, it is difficult to identify a single manner of dividing customers into specific groups. Hence, it is important to know how customer segments are formed. Critical examination of the literature review revealed two main categories of customer segmentation. These categories are linked to the types of information. There are two types of information used in market segmentation (Understanding Market Segmentation, www.dssresearch.com, March 2002).

Classification Variables: Classification variables are used to classify survey respondents into market segments. Almost any demographic, geographic, psychographic or behavioral variable can be used to classify people into segments as follows:

Demographic variables - Age, gender, income, ethnicity, marital status, education, occupation, household size, length of residence, type of residence, etc.

Geographic variables - City, state, zip code, census tract, county, region, metropolitan or rural location, population density, climate, etc.

Psychographic variables - Attitudes, lifestyle, hobbies, risk aversion, personality traits, leadership traits, magazines read, television programs watched, etc.

Behavioral variables - Brand loyalty, usage level, benefits sought, distribution channels used, reaction to marketing factors, etc.

Descriptor Variables: Descriptors are used to describe each segment and distinguish one group from the others. Descriptor variables must be easily obtainable measures or linkable to easily obtainable measures that exist in or can be appended to customer files. Many of the classification variables can be considered descriptor variables. However, only a small portion of those classification/descriptor variables is readily available from secondary sources. Although there are many classifications of descriptor variables used by companies, here we will summarize of some ways widely discussed in the literature.

Most of the segmentations are customer based, but some of them used different criteria. For instance, Storbacka (1997) in his study used a profitability-based criterion and divided customers into four groups as follow: (1) Low volume, unprofitable (2) Low volume, profitable (3) High volume, unprofitable, and (4) High volume, profitable. Zeithhaml, Rust and Lemon (2001) used a customer profile pyramid and divided customers into four segments: (1) Platinum, (2) Gold, (3) Iron, and (4) Lead customers, which identify the value of customers in terms of their profitability. Cover (1999) divided bank customers into the following three groups according to their profitability: (1) Supercustomers, (2) Marginal customers, and (3) Unprofitables. Thus, different organizations used different methods to classify their customers.

2.5.3 Category of Need

Dividing a market into several segments has important implications on management decisions as follows (Understanding Market Segmentation, www..dssresearch.com, March 2003):

Strategic – Service or product offering is some way important to the enterprise mission, objectives and operational oversight. For example, a service that helped evaluate capital investment opportunities would fall into this domain of influence. The purchase decision for this category of offering will be made by the prospect's top-level executive management.

Operations – Service or product offering affects the general operating policies and procedures. Examples might be an employee insurance plan or a corporate wide communications system. This purchase decision will be made by the prospect's top-level operations management. Segmentation affects the general operating policies and procedures.

Functional – Segmentation deals with a specific function within the enterprise such as data processing, accounting, human resources, plant maintenance, engineering design, manufacturing, inventory control, etc. This is the most likely domain for a product or service, but it must be recognized that the other domains may also get involved if the purchase of the product or service becomes a high profile decision.

2.5.4 Benefits of Market Segmentation

There are many good reasons for dividing a market into smaller segments. According to Morrison (1996) some of the benefits of segmentation are as follow:

1. More effective use of marketing dollars
2. Clear understanding of the needs and wants of selected customer groups
3. More effective positioning (developing a service and marketing mix to occupy a specific place in the minds of potential customers within target markets)
4. Greater precision in selecting promotional vehicles and techniques (e.g., advertising media, sales promotion methods, geographical placement)

Through the ability to understand and segment customers based on value, companies will be better equipped to develop customer management strategies that focus on (Gurau & Ranchhod, 2002):

- Directing marketing and sales resources toward those customers who create the greatest value
- Enhancing loyalty programs that help retain high value customers
- Modifying customers service activities for low volume customers
- Increasing customer service activities for high volume customers
- Developing sales pricing distinct from product/sales prices

2.5.5 Market Segmentation in the Lodging Industry

Regardless of types or size, hotels simultaneously serve several market segments. Indeed, few hotels could survive if they did not fill their rooms with various types of guests staying for a variety of reasons and paying different prices (Dube & Reneghan, 1999). Especially, large hotel properties always classify their customers in different market segments as a part of their management and marketing strategies.

Myers (1996) stated that segmentation enables hotel companies to use many opportunities in terms of pricing, costing, identifying business opportunities, allocation of marketing budget in different market segments, and developing appropriate facilities for the need of different customer groups. Most of the lodging properties serving in different type of customer groups pursue different market segments by offering different prices to suit various segments, and thereby attract various target markets. With segmentation, hoteliers can adjust service delivery to maximize the profitability of customers and reduce the costs to service to least profitable customers.

Market segmentation is an important critical indicator to gauge the success of a hotel's overall strategic plan. It is the only way for a hotel to understand its sources of business. Segmentation tracking allows hotels to evaluate the success of its transient pricing strategies and the value of its direct sales and mix of business. More importantly without measuring segmentation, a hotel cannot evaluate the quality of its strategic plan or the impact of its operational decisions. Hotels cannot determine a return on investment of its marketing expenses; nor can it quickly evaluate the need to adjust pricing or marketing strategies if one segment of business fails to deliver its anticipated volume.

Segmentation facilitates a hotel's ability to mobilize resources and to respond more quickly to changes in market demand (Segmentation - What is it and Why it is Important, www.turnkeyhoteladvisors.com, March 2003).

To improve their financial performance, hotel companies often target multiple customer segments by expanding their hotels' product features and services. The logic underlying this strategy is that revenue maximization requires attracting more guests, which is accomplished relatively easily by targeting new customer segments by offering a wide variety of products and services (Enz, Potter & Siguaw, 1999). Segmentation seeks to identify some easily identifiable characteristics with which the purchasing behavior subgroups within the market may be predicted and targeted (Johns & Gyimothy, 2002).

The decision process of MSPA is illustrated in Figure 2. This process has been developed from the analytical process of MSPA, which combines accounting information and the dynamic marketing environment to produce better financial results to the bottom line of a lodging property. As seen from the figure, marketers use financial and non-financial information to make marketing decisions (i.e., adjust pricing, re-organize marketing activities, change, alter, drop, add products/services). Financial information (e.g, sales volume, product/service cost, direct and indirect costs) is received from the accounting system and non-financial information (e.g., size of business, seasonal demands, economic activities, the spending capacity of customers) is received from the marketing environment. The degree and quality of interpretation of financial and non-financial information support marketing decisions made by marketing or other lodging managers. Finally, the quality of the marketing decisions improves the bottom line profitability of the lodging property that is the expected output of the MSPA model.

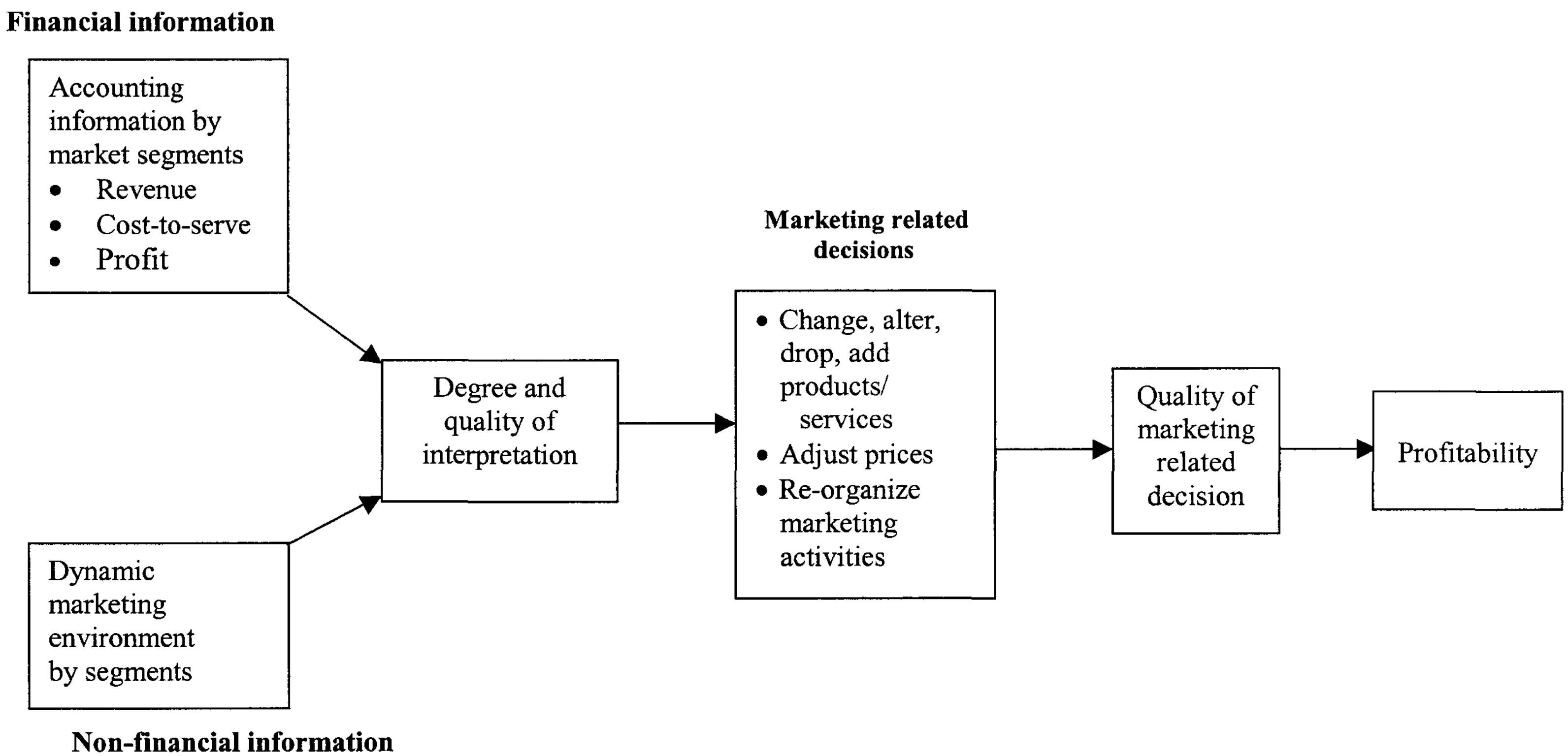


Figure 2: The Process Flow of Market Segment Profitability Analysis from the Marketers' Point of View.

Source: Developed by the author

2.5.6 Advantage of Segmentation in the Lodging Industry

The benefits of market segmentation in the lodging industry can be identified as follow:

- Market segment information makes it possible to improve revenue by market segments
- Hotels can differentiate prices for different market segments
- Helps hotels for marketing strategies
- Helps hotels to focus on more profitable customer groups
- Helps hotel to maximize service quality
- Helps hotels to design different services for different customer groups
- Helps hotels for the decision, dropping, adding or altering some services.

2.5.7 Type of Customer Segments in the Lodging Industry

To reach prospective customers most effectively, hotel marketers identify key customer segments. No lodging business can successfully accommodate everyone. In the lodging industry, there is no unique or best way for market segmentation used by all types of hotels. The type of lodging property, location, size, management style, services and products can tailor segmentation. Some hotels use very simple and abbreviated segmentation and some others use extended segmentations. However, two common variables are used to segment hotel guests (Coy, 2002):

(1) Size of travel party, and

(2) Purpose of trip

Those two variables formed four major customer segments used in the hotel industry:

1. Individual business travelers
2. Individual leisure travelers
3. Group business (Meeting & Conventions)
4. Group Leisure (Tour & Social Groups)

The characteristics of the above groups in the lodging industry can be summarized as following:

Individual Business Travelers: A hotel's business guests are those booked by companies with which the hotel has a contract for specific below-rack rates and credit terms. Such a contract is typically negotiated once a year and roomnights are contractually committed business. This means the hotel must provide these rooms and the client must use and/or pay for them. The primary merchandising effort to this segment is directed at corporate offices through personal sales calls supplemented by direct mail, newsletters and occasional promotional partners.

Business travelers represent a large portion of lodging demand in many market areas. They include people traveling on business representing commercial, industrial and governmental organizations. Peak business demand is usually experienced Monday through Thursday nights (Lindner, Ryan & Way, 1994). Business travel in the United States has been critical to the success of the lodging industry since more than half of room nights were generated by business travelers after 1990 (Sammons, Moreo, Benson

& DeMicco, 1999). The business travelers provide substantial revenues to hotel properties. In essence, the business travelers are most important in profitability.

It is important to understand why business travelers are visiting the market area and how many room nights they generate. Reasons for visiting a particular area might include conducting business with a local company (recruiting, training and management meetings), calling on multiple businesses (by suppliers, vendors and sales representative) and stopping over between destinations (Lindner, Ryan & Way, 1994).

Individual Leisure Travelers: Leisure travelers may visit an area for a vacation, to attend sporting or social events, to shop, or to visit friends and relatives. They might be staying over simply because they are traveling to other destinations. Leisure travelers do not have specification that is more precise as other customer groups. There are varieties of customers within this group traveling with variety of reasons. Leisure travelers may be individuals, couples, families, or small groups. Travelers visiting hospitals and universities are typically included in this market segment.

Leisure room demand is often seasonal. In larger, urban market areas, leisure room demand may be limited to weekends, summer months and holiday periods. To measure the significance of leisure demand in the market area, interview should be hold with local visitor bureau, chamber of commerce and local event and attraction operators. Room prices vary by day of week and time of year. Higher rates usually indicate periods of higher occupancy. Finally, inspect local hotels to determine if they have been designed to serve leisure travelers. Recreational facilities such as pools, fitness centers, tennis courts, snowmobile trails and other features may indicate the importance of leisure travelers to a particular property (Lindner, Ryan & Way, 1994).

Group Business: The group business segment refers to bookings by corporate clients for a group from that one company attending a meeting that is usually held in the hotel itself. Meeting packages often includes meals, coffee breaks and meeting rooms. The group segment is very often further delineated. It comprises hotel based sales occupancy. Group business has these attributes: generally considered blocks of 10 rooms or more booked by the sales department or sales manager (Segmentation-What it is and why is important (www.turnkeyhoteladvisors.com). Conventions involve guests from different companies who are usually in the same industry or line of work

Business group meetings are typically associated with conferences, board meetings, training programs, seminars, trade shows, and other gatherings. Often the sponsoring organization will be from the local area. Out-of-town organizations may use local meeting facilities because they often rotate the sites of their regional meetings. Information on the group meeting market can be obtained through state chapters of the Meeting Planners International and the American Society of Association Executives. Community's convention and visitors bureau or chamber of commerce can usually provide a good estimate of local group meeting activity (Lindner, Ryan & Way, 1994). The merchandising efforts for this group business are directed at the corporations, travel agents, or convention organizers through personal selling supported by materials that promote the hotel and the destination

Group Leisure: This group of customers may be small or large groups who are part of packages tours or members of social groups. The primary merchandising efforts for this segment are directed at travel agents. These groups generate a big portion of revenue in the city centers or in resort hotels, especially in some certain seasons of the year.

Each of these broad segments can be further divided to accurately determine individual customer needs. For example, the leisure market may consist of seniors, retired couples, and families with children, lone travelers, college students, and middle-age couples without children - all with different price sensitivities and seeking different hotel services to satisfy their specific needs. The business travelers segment may comprise top executives, middle managers, and traveling sales representatives. Business travelers represent different income levels and they are characterized by different lodging needs that must be fulfilled by the hotels. Consequently, hotel support services must be available to satisfy each customer group the operator chooses to target. Furthermore, effectively targeting each selected customer segment is likely to require the development of different marketing messages, the use of multiple marketing channels and advertising outlets, and the employment of additional marketing personnel and resources (Enz, Potter & Siguaw, 1999)

2.6 Customer Profitability

Business is about generating profits and cash flow in order to survive and grow. Profits are generated from customers, and products are only a means of converting customer requirements into profits. This may mean investing in customers that generate high profits. In order to make these decisions, companies must understand each customer's profitability. The traditional accounting systems that focused only on product profitability ignore the importance of the dimension of customer profitability. The new approach to marketing is being viewed as the attraction and retention of profitable customers. The ultimate goal, therefore, must be profitable sales to individual customers or customer groups. Once business organizations understand the profitability of customers or market segments, they can undertake initiatives that have a direct and positive impact on their bottom line. These include initiatives that increase the revenues obtained from profitable customers and reduce the cost of serving less profitable ones.

Several authors noted that customers generally vary in terms of profitability (Shapiro *et al.,* 1987; Petro, 1990; Cooper & Kaplan, 1991; Slywotzky & Shapiro, 1993; Wang & Splegel, 1994; Peppers & Rogers, 1997; Reichheld, 1996). Not all customers generate the same costs and revenues over time. Moreover, not all customers generate acceptable cost and revenue streams; they are different at revenue, cost and net contribution to the bottom line. For example, in retail banking, some 50-60 percent of customers may be unprofitable (Carrol, 1991, 1992; Storbacka *et al.,*1994). It has been suggested that the firm should encourage relationships with profitable customers, and attempt to terminate relationship with unprofitable customers (Jones & Sasser, 1995; Peppers & Rogers 1997; Shapiro *et al.,* 1987; Sylwotzky & Shapiro 1993).

Marketing managers use cost and management accounting information to analyze individual customers. By comparing the costs of serving a customer with the revenues generated from that customer, marketing managers can assess the profits generated by customers. When performing a profit and loss statement analysis by the customer, many companies have found that a small number of customers provide most of the profits, while remaining customers provide little or no profit. Some customers even generate losses, after considering all of the hassles in dealing with them. Figure 3 illustrates the profitability profile of a typical company with profitable and unprofitable customers.

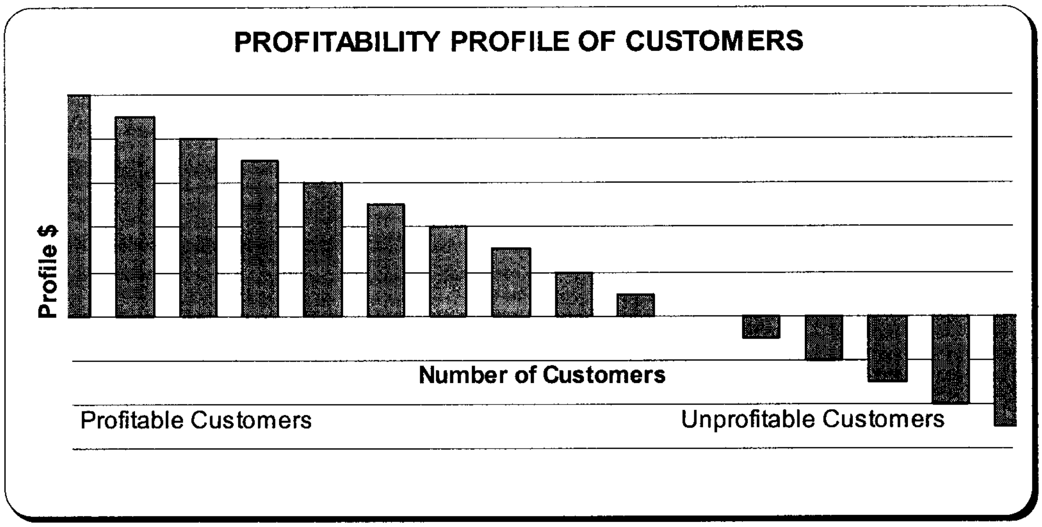


Figure 3: The profile of profitable and unprofitable customers

A customer profitability analysis is a set of procedures that relates costs to the activities that are performed in many functional areas of a business, and then to the customers that consume those activities. Schnoebelen and Skillern (1996) stated that Customer Profitability Analysis is crucial for developing accurate profitability and making informed decisions on supply-chain service offerings. Beik and Buzby (1973) noted that market managers can improve and control decision making with respect to the firm's profit objective by tracing sales revenues to market segments and relating revenues to marketing costs. Bellis-Jones (1989) in his study suggested that customer profitability analysis fills a crucial gap in the range of analytical and management accounting tools available to management.

2.6.1 The Need for Profitability Analysis

The need for customer profitability analysis typically arises as businesses become more complex, serving customer through a number of different channels, from a number of serving points. It enables profitable customers to be nurtured and unprofitable customers to be managed back to profitability. When combined with product profitability analysis, management of the product mix, the impact on bottom line profitability can be significant (customer profitability analysis, www.thorogood.com). Understanding the costs of doing business and where profits are coming from is vital for company survival. Understanding the customer profitability is a new level of information that enhances the knowledge of business managers on profitability activities and customers. In an increasingly competitive environment, it is important to retain the most profitable customers. In the mind of many business people to be an effective operator, one should understand and monitor customer profitability.

Although some authors claim that there is a correlation between customer satisfaction and firm profitability, a direct relationship between satisfaction and sales could not be proven in all cases (Scharitzer & Kollaritz, 2000). Jeffrey and Franco (1996) believe that customer satisfaction information that does not serve these ends is counter-productive. They also added that this is distracting and may very well give an organization a false of security. It can cause the organization to miss market opportunities, suffer unnecessarily thin margins, and lose profitable customers - all, which can threaten a business's existence. Therefore, hotel properties should not stand on a high customer satisfaction index. They need proper analytical measurement for the profitability of individual customers or market segments.

Customer profitability is receiving greater attention than ever before. This concept is critical for understanding and managing customers and has the capability for building customer relationship and capturing the value applying it, even it hasn't achieved full acceptance (Wyner, 1999). In cases where the behavior of particular customers has a major influence on costs, there is a need to calculate customer profitability for the following decisions (Booth, 1994):

Support negotiation with key customers: This is perhaps the most important use of customer profitability information. Key customers will often demand special conditions, relating to either the price or the specification and quality of the goods. In the absence of information on the profitability of key customers, there will be uncertainty over the line to take during negotiations.

Develop a marketing strategy: The marketing strategy will seek to generate business in profitable segments, but this cannot be done if there is no understanding of segment (or customer) profitability.

Design price structure: Pricing structure needs to provide signals to customers to encourage them to purchase in ways that enable efficient production and distribution. This requires an understanding of cost behavior.

2.6.2 Importance of Customer Profitability Analysis

Customer profitability analysis provides an explicit evidence of what firms suspect but cannot prove that a small number of customers are extremely profitable. Across nearly every industry, 80% of the profits come from fewer than 20% of the customers. Moreover, some of the highest revenue customers are often not in the most profitable group. A significant percentage of customers is draining profit from the firm. Such data lead managers to think about strategies to change customer behavior to improve profitability (Wyner, 1999). Once customer profitability is known, the marketing strategy of the company can be accessed by focusing on customers that are more profitable.

Schnoebelen and Skillern (1996) emphasized that Customer Profitability Analysis is crucial for developing accurate profitability and making informed decisions on supply-chain service offerings. Beik and Buzby (1973) noted that market managers can improve and control decision making with respect to the firm's profit objective by tracing sales revenues to market segments and relating revenues to marketing costs. Bellis-Jones (1989) in his study suggested that customer profitability analysis fills a crucial gap in the range of analytical and management accounting tools available to management.

Customer profitability analysis involves quite simply, taking the logic of product costing and applying it to customers (Warner, 1979). If marketing managers need to know the cost of products and their level of profitability in order to formulate product/service strategies, so sales managers need to know the costs and profitability of major customer strategies. Customer profitability analysis will be more important in the future, as companies will pay more attention to customer retention and long-term customer relationship (Reichheld, *et al.,* 1996; Fornell & Wernerfelt, 1987). Firms should conduct both product and customer profitability analysis as the firm has to work strategically both with products and customers (Fornell & Wernerfelt, 1987). In the new business environments, as more companies are becoming more market oriented, it is reasonable to believe that the frequency of use of customer profitability analysis related to marketing decisions will increase. This highlights the question of quality of the data needed for such analysis (Selnes, 1992).

Understanding customer profitability is especially valuable for service companies that offer a full line of services to customers. But many companies lack the ability to track all the services used by individual customers, much less the profitability of each product/service used by an individual customer (Kaplan & Narayanan, 2001). Selden and Colvin (2002) highlight the importance of the profitability analysis with the following sentence:

> "Managers aren't the only ones who need better knowledge of customer profitability. Investors do too. They'd love to screen their holdings with the kind of analysis such as customer profitability analysis, but they can't. In today's environment many companies are publishing far more data than before, but they're still excluding a few pieces of extraordinarily valuable information: customer-acquisition costs, maintenance costs, length of customer relationships, and some sense of how customer profitability is distributed."

2.6.3 Benefits of CPA for Marketing Decisions

Several authors stressed the importance of profitability analysis for marketing decisions (Warner, 1979; Campbell, 2001; Lin, Kawas & Park, 2003; Harvey, 2003; Smith & Dikolli, 1995; Wyner, 1999; Pearce, 1997). For example, Warner (1979) expressed four significant benefits for marketing managers in his article as follows:

1. General background for negotiation
2. Formulation of customer strategies
3. Cost reduction
4. Product mix changes.

Lin, Kawas and Park (2003) concluded that there are at least three benefits of CPA for marketing decisions.

1. Eliminate false assumptions
2. Segment clients from a different perspective
3. Make informed decisions.

Lin, Kawas and Park (2003) also suggested several strategic application of CPA for marketing decisions. They stated that once marketing managers have eliminated all possible false assumptions about profitability drivers then they would have the factual data about pricing, promotions and distribution. Marketing managers are ready to define a strategy and implement tactics that will result in increased customer profitability. There are at least six strategies that can be implemented when utilizing the results of a CPA as follows:

1. Protect existing highly profitable customers

2. Re-price expensive services based on cost to serve each client
3. Discount low-cost-serve customers to gain market share
4. Negotiate with customers to reduce cost-to-serve
5. Concede permanent loss-customers to competitors
6. Capture high profit customers from competitors.

The CPA enables management to answer key questions such as following (Noone and Griffin (1997):

- Do our target markets meet our profitability criteria?
- Which accounts generate the greatest profit contribution and how can we best protect them?
- What are the maximum discount/service packages we can afford in the next round of negotiations with tour operators, while still meeting our own profit objectives.
- Do our large corporate accounts really make money?
- Under what conditions are we prepared to walk away from that volume and what will we have to do consequently?
- Should we stay in this market?

Mulhern (1999) states that the exact specification of a profitability analysis has important implications for marketing decisions based on profitability measures. Accordingly, it is crucial to consider the many specification issues that pertain to a profitability analysis.

2.6.4 Customers, Segments and Profitability in the Lodging Industry

As other business entities, lodging organizations in the global marketplace use many financial and non-financial performance techniques to improve the profitability, while satisfying customer needs and reducing the costs to serve them. The following financial methods have been used in the lodging industry in the last decade on the basis that they improve the provision of accounting information for marketing decision-making in the hotels (Downie, 1996):

- Cost volume profit (CVP) analysis
- Rooms revenue engineering
- Yield management
- Market segmentation profit analysis (MSPA)

Each of these techniques has some benefits and shortcomings to the bottom line depending on specific situations. For example, cost volume profit analysis (CVP) is concerned with investigating the relationship between cost, volume and profit. It assists managers in both profits planning and budgeting. CVP analysis can be used to evaluate alternative courses of action in terms of generating profit for a period of time, a single department, and a promotional package or for the operation as a whole.

Rooms revenue engineering is a technique that has two variable cost elements of selling rooms – the cost of serving and the cost of materials (Lockwood & Jones, 1990). This information helps managers improve their pricing decisions, because they are aware of the profit rather than the revenue implications of their decisions.

In yield management, the concept of selling the most space possible is combined with also considering the rate at which the space is sold. This type of strategy is linked to maximization of revenue. A major problem of yield management approach is that it may encourage heavy discounting, which could be detrimental if used for long-term pricing decisions (Dunn & Brooks, 1990). This technique is useful to monitor and achieve maximization of rooms revenue and evaluate sales and pricing alternatives. However, because it ignores the level of profit generated by decisions, it is not effective for the long-range profit goals of a company.

To better serve their most profitable customers, lodging companies need to know who their most profitable customers are, so they can anticipate their needs and target them more effectively. Lodging properties can do this by analyzing key information about current and potential customers. Such information includes customer profile, spending pattern, number of nights they stay, total sales volume, spending behavior, product preference and customer complaints. Becoming more intelligent about customer allows companies to tailor the right products and right services in a cost efficient manner possible.

The marketing applications in hotels have aimed to increase revenue by ignoring the net contribution to the bottom line. Yield management techniques have been used in hotels in terms of revenue maximization. Revenue maximization is an alternative goal, since it increases the amount of money generated from existing market demand (Regan, 1989). Market-demand pricing is an appropriate short-term strategy; but to remain profitable in the long-run, hotels must achieve an average rate that covers both fixed and variable costs. By using the CPA technique, hotel managements will have a better understanding of the customer profile in terms of spending patterns and costs of services to those customers. This will enable marketers to pursue the most profitable segments in their business area. Hotel companies need exceptional marketing strategies to find and retain customers who deliver long-term profits to the business. To improve their financial performance, hotel companies often target multiple customer segments by expanding their hotels' product features and services.

Market segment profitability analysis is not an appropriate tool for all types of hotels. It is only appropriate for the hotels where guests come from a number of well-defined and distinctly markets that each spending decision might have distinctly different profit implications. A single convention guest, for example, is less profitable to the hotel than a premium gaming customer, but the convention market can fill large number of rooms while the premium gaming market cannot.

In the lodging industry, customer profitability analysis allows management the following advantages (Dunn & Brooks, 1990):

1. Consider all sales alternatives, including markets that are not room related.
2. It permits consideration of all revenues and expenses in evaluation of market segment contribution to hotel profits
3. Assessment of market segment profitability will allow firms to refocus evaluation of market segment performance, and pricing strategies, on bottom line profit oriented objectives.

The implementation of Market Segment Profitability Analysis (MSPA) within a hotel environment necessitates a change in current accounting approaches to revenue and cost allocation. It requires an adjustment from the way in which revenues and expenses are traditionally recorded in the accounting systems, by operating department and overhead categories, to reporting each by customer group. While revenue data by customer group can be sourced directly from many property management or yield management systems, the key to MSPA lies in the selection of an appropriate method of matching costs with customer groups (Noone & Griffin, 1999). Noone & Griffin (1997) explored potential costing techniques for MSPA application and proposed that activity-based costing (ABC) is an appropriate and effective costing method to apply in MSPA in a hotel environment.

2.7 Measurement Issue of Customer Profitability

There are many approaches to customer profitability measurement. While there is no right or wrong way, some approaches are more complete and therefore more reliable than others are. Although any profitability measurement is better than none at all, extreme caution should be exercised when using less reliable cost information for important decisions (Petro, 1990).

Any discussion of profitability measurement involves revenue and costs of a cost subject. While almost all of the lodging properties keep the records of revenues by each customer segment, doing the same thing for the costs attributable to those segments is not easy as identifying product costs. Petty & Goodman (1996) stated that the CPA must not only review the costs of the products sold to customers, but also the costs of all activities connected with marketing, selling and delivering the goods to the customer and subsequent collection of the sales proceeds.

Measuring customer profitability is not an easy task. Although it seems easy to measure the net contribution of customers to the bottom line of the company, it is not easy to calculate it as product profitability. In fact, net contribution is the total revenue of a customer minus total costs serving to a customer to obtain that revenue. Accounting provides different measurement for different purposes.

Mainly there are two important elements of measuring the profitability of a customer or customer segment.

(1) Revenue determination and

(2) Cost determination

These elements can be expressed as follows:

2.7.1 Revenue and Cost Determination

When measuring customer profitability of a lodging property, the first consideration is to find the total revenues of the customer segments. When a hotel defines its customer segmentation and configures this information in a computerized Property Management Systems (PMS), a revenue report is produced segment by segment. However, customers who are not registered as room guests use the hotel facilities and generate revenue for the hotel that is not taken into account as segment revenue. However, an additional work can capture the revenues that are generated by those customers who are not registered as hotel room guests.

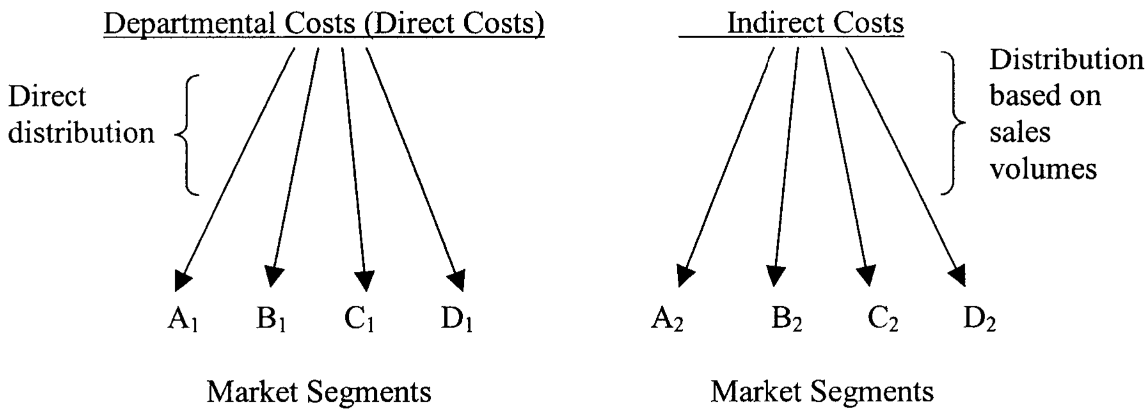
A fully developed profitability model features the assignment of variable costs to customers. Variable costing shifts a revenue analysis to a contribution margin analysis. When variable costs cannot be allocated, less complete formulations can be used that assign costs to market segments. A sophisticated customer profitability analysis technique captures all variable and fixed costs. In most cases, fixed costs are not allocated to customer segments (Berger & Nasr, 1998; Dwyer, 1989). Foster, Gupta and Sjoblom (1996) provided a more detailed description of the costs that should be considered when computing customer profitability.

2.7.2 Traditional Accounting Techniques for Measuring CPA (Volume-Based Approach)

Regardless of the importance of customer profitability, the traditional accounting systems are not designed to measure the profitability of a customer segment. They are designed to measure the department or product profitability. In terms of measuring the profitability of a customer group, all related costs are to be taken into account to determine the actual profit or loss produced by that group. Therefore, to obtain a more meaningful understanding of costs and profitability at the customer level, customers should also be treated as cost objects (Morrow & Hazell, 1992). Although the companies are more customers oriented today, traditional management accounting focuses on products, services or departments. Rarely can traditional accounting systems produce customer profitability figures (Anandarajan & Christopher, 1987; Innes & Mitchel, 1995; Swenson, 1995; Foster, Gupta & Sjoblom, 1996), and thereby contribute to understanding the cost of reaching and serving particular types of buyers (Johnson and Kaplan, 1991).

In a traditional accounting system, as other indirect costs allocated, marketing costs are allocated among customers using sales volume as a single cost driver. It assumes that each dollar of revenue contributes equally to net income. When customers are heterogeneous, revenues as well as service and marketing costs may vary substantially across customers (Foster, Gupta & Sjoblom, 1996; Ward, 1992), causing differences in customer profitability. Revenues may differ due to different prices or different selling volumes across customers. Cost differences arise from various ways in which customers use a company's resources differently. They may differ markedly in the marketing support they need. Therefore, the net profit contribution margin in a traditional accounting system is a poor indication of profitability and often results in managers making the wrong decisions with severe consequences (Selnes, 1992).

The traditional accounting techniques have been questioned in many ways: For example, with the historical reasons traditional accounting focused on product profitability, rather than customer profitability. Traditional accounting reports geared for external regulatory reporting are not meeting the internal decision making needs of most business owners or managers today (Pryor, 2003). Today, in many companies the traditional basis for classification and internal reporting information provides a very poor basis for predicting the outcomes and the types of decisions being taken in the contemporary business environment. Figure 4 illustrates the process of how direct and indirect costs are allocated to different market segments.



Direct Costs	A_1	B_1	C_1	D_1
Indirect Costs	A_2	B_2	C_2	D_2
Total Costs of Segments	A_{1+2}	B_{1+2}	C_{1+2}	D_{1+2}

Source: Developed by the author

Figure 4: The Flow of Traditional Cost Allocation to Market Segments

2.7.3 Activity Based Costing for Market Segment Profitability Analysis (Transactional-Based Approach)

The use of Activity Based Costing systems (ABC) has increased dramatically in manufacturing and service sector over the last decade (Quelch & Kenny, 1994). ABC techniques are now employed by many firms to give an alternative view of customer profitability and cost behavior. ABC recognizes that all activities taking place within a firm support the production, marketing, delivery of goods and services. Managers can take advantage of this understanding by analyzing profitable and unprofitable market segments. ABC provides a more accurate and effective way to understand the economic structure of any organization. Many authors believe that the traditional cost accounting does not generate accurate information for customer profitability analysis.

In the accounting literature, several authors criticized traditional accounting systems and propose activity-based costing (ABC) as an alternative, claiming that it results in more appropriate cost figures (Selnes, 1992; Foster, Gupta & Sjoblom, 1996; Kaplan & Cooper, 1997; Goebel, Marshall & Locander, 1998). They contend it is more logical and accurate to use actual service activities to allocate customer-oriented expenses. Customer profitability analysis (CPA), using ABC, identifies the activities steaming from servicing a particular customer. Using additional activity drivers, the costs of these activities are allocated to the customer that caused them, resulting in more accurate profit information (Petty & Goodman, 1996). The superior information provided by CPA should allow managers to learn more from the feedback they receive from the market, and achieve a better fit between their budget allocations and the needs of the market.

Bellis-Jones (1989) claimed that conventional accounting philosophy is inappropriate to customer profitability analysis. Further, Goebel, Marshall and Locander (1998) claimed that "Only with ABC information can companies fully determine the costs if market-orientated activities are providing the desired benefits in an efficient and effective manner. To engage in market and customer oriented activities without a full understanding of the financial implications of such activities simply is bad business."

ABC is a new model that can be utilized for market segment profitability analysis. ABC provides the tools, which go beyond gross-margin, and penetrates the real economics of all aspects of cost and profitability, including that of serving customers.

ABC provides a more effective way to understand the economic structure of any organization but it is necessary to abandon all forms of cost allocation except for financial supporting (Sharman, 1996). Figure 5 shows the process flow of Activity-Based Costing System in the lodging industry.

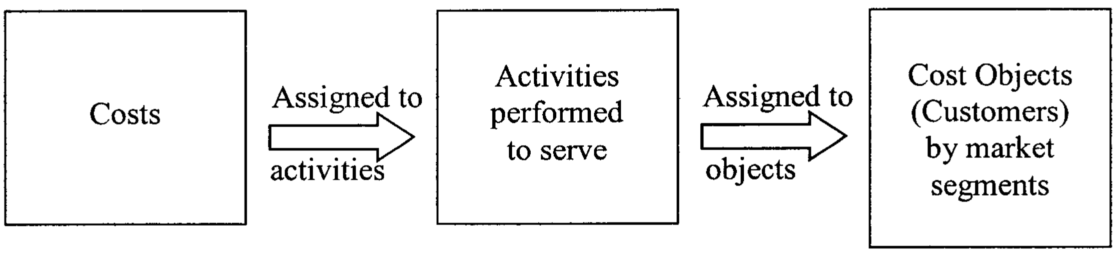


Figure 5: The Process Flow of Activity Based Costing in the Lodging Industry

As seen from the figure, a cost first is assigned to a specific activity that performed within the hotel to produce a product or a service, and from the activity to cost objects (market segments). For example, if an activity is performed to register a guest to the hotel, the cost of the activity is assigned to the service (i.e., reception desk) then to an individual guest (cost object) or to a market segment.

The following Table 3 compares the traditional departmental based accounting and activity-based accounting in conceptual base. Both approaches can be examined with six different characteristics. However, three of the categories are important enough to be mentioned. (1) Focus, (2) Revenues, (3) Expenses. While traditional departmental accounting focuses on revenue maximization, ABC accounting focuses on profit maximization.

Table 3: Comparison of Traditional Departmental Accounting and Activity-Based Market Segment Accounting in the Lodging Industry.

	Traditional departmental accounting	**Activity-based market segment accounting**
Focus	Revenue maximization Current	Profit maximization of market segments Long term
Market Segments	All markets served	Same
Revenues	Rooms Banquet Restaurant Telephone In-room movies In-room Bars Laundry Casino/Game	All customer segments defined by hotel. Reports revenues by market segments
Expenses	Operated departments Overhead expenses Fixed Charges	Cost-to-serve (total costs of products and services consumed by customers)
Applications	Pricing, product profitability Cost management Capital-project evaluation Strategic planning	Strategic and tactical marketing decisions. Pricing decisions, adding or eliminating services or products.
Objectives	Maximize revenue from every source of customers	Attraction and retention of profitable customers

Source: Adopted from Kate D. Dunn & David E. Brooks (1990)

Traditional accounting collects revenues in a departmental base, but ABC accounting collects revenues in customer segment base. In traditional costing approach, revenues are divided into three categories, but in ABC accounting, all costs consumed by customers are assigned to related the customer segments.

Table 4 illustrates a theoretical monthly income statement of a lodging property, developed based on the traditional accounting and market segment accounting approaches that uses activity-based costing. As seen from the table, revenue and cost distribution is completely different from each other, although total revenues have the same value in both approaches. In traditional accounting, all revenues are assigned to revenue-generated departments, but in market segment accounting, revenues are assigned to the market segments. Cost distribution differs between the two approaches. The main objective of a traditional costing system is to divide costs as direct and indirect costs. While direct costs are assigned to the related departments, undistributed costs are classified under cost centers, which do not generate any revenue. However, in market segment accounting, there are no direct or indirect costs. All costs consumed by customers or segments are assigned to the related market segments.

Table 4: A Theoretical Income Statement of a Lodging Property Based on Traditional and Market Segment Accounting Approaches

Traditional Accounting[1]		**Market Segment Accounting**[2]					
Departmental Revenues	**Total**	**Revenues**	Business Travelers	Group Travelers	Leisure Travelers	Conference Travelers	**Total**
Rooms Revenue	650,000	Rooms Revenue	218,000	137,000	129,000	171,000	655,000
Food & Beverage Revenue	224,000	Food & Beverage Rev.	104,000	59,000	32,000	24,000	219,000
Telephone Revenue	28,000	Telephone Revenue	11,000	6,500	2,200	8,300	28,000
Other Departmental Revenue	23,000	Other Department Rev.	13,400	2,750	4,420	2,430	23,000
Other Revenue	3,500	Other Revenue	1,420	1,600	280	200	3,500
Total Revenue	**928,500**	**Total Revenue**	**347,820**	**206,850**	**167,900**	**205,930**	**928,500**
Department Costs		**Cost of Revenue***					
Rooms Department	182,500	Marketing (ads)	10,800	7,100	4,600	4,700	27,200
Food & Beverage Dept.	128,400	Marketing (other)	6,350	6,800	6,470	4,700	24,320
Telephone Department	11,930	Reservations	7,700	8,900	4,700	7,280	28,580
Other Departmental Costs	9,070	Check-in/Check-out	9,600	3,760	3,600	6,800	23,760
Other Costs	3,000	Housekeeping	11,400	13,700	5,760	21,800	52,660
Total Department Costs	**331,900**	Rooms	24,210	24,550	12,540	16,200	72,500
Gross Operation Income	**596,600**	Banquet	-	-	-	5,500	5,500
Undistributed Costs		Restaurant (food cost)	41,360	14,1600	10,080	5,760	71,360
Administrative & General	64,680	Restaurant (other)	18,800	9,450	6,670	16,620	51,540
Sales & Marketing	51,520	Telephone (cost)	3,300	1,950	660	2,4900	8,400
Repair & Maintenance	75,800	Telephone (other)	1,230	760	710	830	3,530
Property Insurance & Taxes	3,800	Administrative	31,500	20,800	11,500	11,700	75,500
		Other Costs	22,330	16,380	20,350	18,790	77,850
Total Undistributed Costs	**195,800**	**Total Costs**	**188,580**	**128,310**	**87,640**	**123,170**	**527,700**
G.O.P**	**400,800**	**G.O.P**	**159,240**	**78,540**	**80,260**	**82,760**	**400,800**
Profitability (%)	**43 %**	**Profitability (%)**	**46 %**	**38 %**	**48 %**	**40 %**	**43 %**

1= Departmental based accounting
2= Segment (customer) based accounting
* Activity center costs
** Gross Operational Profit

2.7.4 Discussion on Volume Based vs. Transactional Based Allocation (Traditional Accounting vs. Activity Based-Costing Accounting)

When compared to conventional cost analysis, an ABC system can change the way companies do business by providing a significantly improved view of costs. Schnoebelen and Skillern (1996) claimed that conventional cost accounting methods do not properly identify the differences in cost-to-serve. They fail to identify post-production costs to the retailer, channel or product. ABC is a more sophisticated approach, can stimulate in-depth cost analysis and wider profit margins. ABC can lead to the elimination of unprofitable activities, products, services or price changes. ABC analysis can also support improvements in product design by helping to prioritize product development resources.

Smith and Dikolli (1995) emphasized that field service and sales support costs for each customer would necessitate some form of ABC. They pointed out that ABC can improve the accuracy of CPA but ABC systems have limitations that need to be addressed. They also added that more sophisticated ABC systems might manage customer related costs effectively, but this depends on largely on the objectives of the ABC system and or the nature of the production process. Schnoebelen and Skillern (1996) suggested that ABC is the best model that can be used as a basis for CPA and business decision-making. Smith and Dikolli (1995) claimed that a non-ABC approach to CPA is likely to cause customer cost distortions in such translations. Lewis (1991) outlined a simple ABC system for recognizing marketing cost by product line. He also indicates how these ideas can be easily transferred into a profitability analysis statement by territory.

Although many of the authors believe that the ABC system is a more accurate approach to use with CPA, the value of ABC in decision-making is often questioned. It is argued that such a system only formally captures what managers already know beforehand (Malmi, 1997; Narayanan & Sarkar, 2002). Besides formal accounting information feedback, there are many informal ways for managers to stay informed. Sales accounting interact and meet with customers. They observe customers' behavior and keep personal records on their clients. Consequently, they develop "informal cost estimates" (Malmi, 1997) enabling them to identify which customers are more profitable than others. Managers are able to combine this information with period-by-period profit feedback on prior allocation decisions, offering a powerful source of learning. CPA may not reveal any "new information" at all (Narayanan & Sarkar, 2002).

Research on the debate whether CPA is a more appropriate technique to improve decision-making is quite limited. An unresolved issue in accounting research is the effect of reporting different levels of customer-related information on management decisions (Foster & Gupta, 1994). Indeed, both support for and opposition to CPA are largely based on anecdote and case studies (Anandarajan & Christopher, 1987; Foster, Gupta and Sjoblom, 1996); Kaplan & Cooper, 1997; Malmi, 1997; Selnes, 1992; Ward, 1992).

2.7.5 Barriers to Measuring Customer Profitability

Customer profitability is very basic concept that few organizations have performed well. It is the management accountants' professional responsibility to focus the organization an economy reality, as opposed to bureaucratic and redundant financial practices that add no value (Sharman, 1992). Sharman (1992) also noted "management accountants should strive to add value to their organizations by moving beyond simple financial accounting requirements, and make a concerted effort to provide meaningful operational information to business managers.

To understand customer profitability requires a fresh approach to business process. Setting up customer profitability will take time and money for a benefit, which is actually hard to quantify. There are perhaps the key factors affecting the development of customer profitability practices within the industry (Stark, 2003). These factors pointed out by Bellis-Jones (1989) as following:

- Conventional accounting philosophy is inappropriate to this type of analysis.
- Most companies are organized along functional lines, where the operations being quantified cross several functional boundaries.
- Some functions do not support such analysis, thereby devaluing the effort of others.
- Some companies feel it is inappropriate to allocate the costs of providing a service to those who receive it.
- Many companies place strong emphasis on the measurement of profit center performance. Although this orientation is valuable in measuring overall performances, it is also introverted in that it does not focus on customer performance at the individual level - the level that many commercial decisions are made.

As a result of these constraints, few companies get beyond measuring customer profitability at the level of gross margin net of trade discount; they prefer to focus on easy rather than valuable measurements. In other words, most companies understand the issues but do not know how to resolve them.

Petty and Goodman (1996) brought a similar view as Bellis-Jones pointed out in his article. They stated that "While revenues and related gross trading margins are generally well understood and comprehended by managers, the calculation and determination of customer specific costs, and hence profits by specific customer, is often relatively unknown. Ward (1995), Innes and Mitchell (1997) stated the problem in terms of using traditional accounting systems in companies. They stated that the current accounting systems used by companies make it difficult to improve cost analysis and this often requires changes in management accounting principles. According to Connoly and Ashworth (1994) customer revenues and related trading margins are generally clearly understood, but developing a meaningful customer specific cost is sometimes a little more difficult.

2.8 Summary of Chapter 2

A literature review of customer profitability analysis reveals that the concept and financial measurement model of CPA is very important for every business organization, even though it is not widely used in every industry. Segmenting a market into different customers or customer groups in terms of profitability enables business organizations to analyze the revenue and cost-to-serve information of those groups. Customer profitability can be measured by using traditional accounting or activity-based costing technique. Most of the authors in the literature suggested using activity-based costing technique by claiming that it is more effective than the traditional accounting method. It is a common belief that CPA has very important implications on the marketing decision process and improves the operational efficiencies and thus the profitability of business firms. However, CPA techniques have some conceptual and practical limitations in terms of applying it in every area of the business.

Chapter 2 dealt with the literature and research about CPA. This chapter has four sections. Section one deals with historical perspectives of CPA, including CPA in marketing, accounting, and hospitality literature. Section two discusses market segmentation and its utility in the lodging industry. Section three focuses on customer profitability with special references to the lodging industry. The last section discusses issues regarding measurement of CPA.

CHAPTER III

METHODOLOGY

3.1 Chapter Review

This chapter describes the research design, sampling plan, research instruments, validity and reliability, data collection, data analysis methods, and limitations and assumptions of the study. In this study, a mixed mode methodology that was comprised of a web-based questionnaire and mail survey was used as the data collection procedure. The major advantage of the web-based questionnaire survey is that they give the researcher the ability to survey a large diverse sample at a relatively low cost and high response rate (Cobanoglu, 2001). Web-based surveys are both economical and fast. This makes it a better choice for some populations. In addition to the web-based survey, the traditional postal mail survey was also used to reach the target population of subjects who did not provide an e-mail address or did not respond to the web-based survey.

3.2 Research Objectives

A number of studies have been conducted regarding customer profitability analysis, but the majority of the studies were concept or model development or in a case study form. There is a dearth of research investigating the use of market segment profitability analysis in the lodging industry. Thus, the purpose of this study is to report the information that will be useful in knowing the potential value and existing use of accounting information in marketing related decisions of market segment profitability analysis. The research objectives of this study were broken down into the following five specific objectives:

1. Find the level of agreement between marketers and controllers concerning the full cost allocation among different market segments.
2. Compare the potential and existing value of the accounting information as perceived by the marketers used in marketing decisions.
3. Find the importance and frequency of use of specific accounting tools in marketing decision-making related to market segment profitability analysis.
4. Find the importance and frequency of use of specific accounting tools in marketing decision-making related to market segment profitability analysis.
5. Compare hotel marketers' and hotel controllers' perceptions on market segment profitability issues.

3.3 Institutional Review Board (IRB)

In consonance with the federal policies to protect participants of any research activity (45 CFR, 46), the Oklahoma State University (OSU) policy requires prior review and approval of all studies involving human subjects. The OSU institutional Review Board reviewed the evaluation proposal in compliance with the university policy. The study was approved and the researcher was granted permission to collect data from human subjects. The IRB application number is HE0249. A copy of the IRB approval is attached in Appendix C.

3.4 Research Design

This study comprised a descriptive and inferential study to investigate the application of accounting for segment profitability analysis, the use of cost allocation among market segments, potential and existing value of the accounting information, importance and frequency of use of the accounting information in marketing decisions and the perception of marketers and controllers on market segment profitability. Inferential statistics were employed in finding the differences between potential and existing value of the accounting information in marketing decisions and for comparing the perception of marketers and controllers on the market segment profitability.

The subjects of this study were hotel controllers and hotel sales/marketing managers. Hotel controllers were selected from the database of Hospitality Financial and Technology Professionals (HFTP) and sales/marketing managers were selected from the members database of the Hospitality Sales and Marketing Association International (HSMAI). Members' information for HFTP was provided by HFTP headquarters with the condition of publishing the survey results in the "Bottomline" magazine, published by HFTP. Members' information for HSMAI was obtained from the web page of HSMAI, which can be accessed by all its members.

Planning and developing for the research study began in January 2002 and continued through March 2003. During this time, a review of literature was conducted, data collection procedures were determined, two cross-sectional survey questionnaires - marketers and controllers –were formulated and data analysis techniques were selected.

In order to develop a base for the questionnaires the first priority was given to the literature and similar previous studies. Some questions were developed based on interviews with controllers and marketers, interviews with the faculty members of Hotel and Restaurant Administration Department (HRAD) at Oklahoma State University and pilot test with hotel controllers and marketers. As a part of the questionnaire development, face-to-face interviews were conducted with marketers and controllers. The main purpose of these interviews were to learn:

1. The usefulness of the current accounting system in marketing decisions
2. How financial information is used for marketing decisions
3. How marketers and controllers measure the profitability of different market segments.

The face-to-face interviews with controllers and marketers were conducted in full-service lodging properties in Oklahoma City. Full service properties were selected because their sizes, product and service spectrum and different market segments they serve make them to employ sophisticated accounting tools to manage and measure the activities in financial terms. Interviews were conducted in May 2002 with five controllers and in November 2002 with five sales/marketing managers. This process allowed the researcher verbal communications with industry professionals and provided the researcher to understand the structure of the accounting systems, utilization of the accounting information and market segments of the properties. After the interviews, some questions were added and some questions were deleted or restated in order to improve the validity of the questionnaire. The interviews were provided valuable information to the study about the questionnaire design and measurement scale.

Prior to data collection, the questionnaires were pre-tested. A few interviews were conducted with the faculty members of the Hotel and Restaurant Administration Department (HRAD) at Oklahoma State University. Based on the interviews, faculty members were asked to provide comments on question format, length, wording, and order to identify biases and possible ambiguities. At the final stage, a pilot study was also employed in which 10 lodging controllers and 10 marketers offered comments for the final survey. After receiving the comments from controllers the questionnaire were modified and redefined. Based on the feedback from the industry professionals, faculty members and hotel controllers the questionnaires were modified to reflect the final format (See Appendix A and B).

3. 5 Populations and Sampling Plan

Two separate populations were used as the sampling frame of this study. The survey populations of this study were hotel controllers and sales/marketing professionals working for individual lodging properties in the United States. Thus, the target population for this study can be examined in two parts as follows:

3.5.1 Hotel Controllers

The first survey population was the hotel controllers who were in charge of the accounting department of individual lodging properties and the current members of Hospitality Financial and Technology Professionals (HFTP) as of July 2002. HFTP database comprised 2,200 members of hotel financial and technology professionals working in different areas of the hospitality industry. HFTP database consists of different hospitality professionals, such as chief financial officers, information system managers, financial controllers, accounting managers and other accounting and information technology officers. As of July 2002, 870 of the 2,200 members, who were the sample of the study were holding a position in the U.S. lodging properties as financial controllers, assistant controllers or similar positions working in accounting or finance department.

3.5.2 Hotel Marketers

The second survey population was sales/marketing managers who were in charge of the sales/marketing departments of individual U.S. lodging properties and who were the current members of Hospitality Sales and Marketing Association International (HSMAI) as of October 2002. HSMAI database consists of 3,800 members from all over the world. As of October 2002, 957 of the 3,800 members were the sample population who were holding a management position in the sales/marketing department of the U.S. lodging properties. The remaining members of HSMAI were either non-sales/marketing members or holding sales/marketing positions in non-U.S. properties.

3.6 Research Instruments

Two self-administered survey questionnaires were developed for marketers and controllers (Appendix A and B). They consisted of common and different questions seeking to provide suitable information to fulfill the objectives of the study. They were created based on the relevant literature review, similar previous studies, information obtained from the interviews with controllers and marketers, and interviews with the faculty members of HRAD. In designing the questionnaires, the first priority was given to the literature review. The first part of controllers' questionnaire was adapted from the Geller and Schmidgall's study (1980). The second part of the marketing questionnaire was modified from a previous study published by Foster and Gupta (1994). After interviewing with five hotel controllers and five sales/marketing managers, some questions were added and some questions were deleted or restated in order to improve the validity of the questionnaire. In terms of making logical comparisons between the hotel controllers and sales/marketing managers, some of the questions in both questionnaires were kept the same. Both questionnaires have five main sections (See Table 4). The questionnaire designs were self-administered and structured with multiple choices.

3.6.1 Marketers' Questionnaire

The marketers' questionnaire was divided into five main sections. The first section of the questionnaire asked marketers the following questions:

1. Do you agree that all company costs - both direct and indirect - should be allocated among market segments?
2. Are you currently using any method to measure the profitability of each market segment of your property?
3. What are the reasons for not using market segment profitability analysis?
4. Is your hotel using any of these methods (specified) to evaluate your market segment profitability analysis?

In the second section, the instrument developed by Foster and Gupta (1994) provided the basic framework for developing the preliminary questionnaire for marketers. Respondents were given 24 accounting tools and asked to evaluate these tools on a Likert-type scale. Next to each statement two columns were given. In each column, respondents were offered five choices in a Likert-type scale to mark, ranging from 1 (least valuable) to 5 (most valuable).

In the first nine accounting tools, respondents were asked to mark their perception on a Likert-type scale of "the potential value and existing value of the accounting information" (For this group left column is potential and right column is existing value). At the top of the first column, respondents were asked to "indicate how valuable accounting information potentially is to your decisions." At the top of the second column, respondents were asked to, "indicate how valuable information from your existing accounting system is to your decisions."

The next fifteen accounting tools were about "the importance and frequency of use of the accounting information." In the first column, five choices were offered in a Likert-type scale, ranging from 1 (least important) to 5 (most important). In the second column respondents were offered five choices in a Likert-type scale ranging from 1 (least frequently) to 5 (most frequently). At the top of the first column, respondents were asked to "indicate how important each of these accounting tools potentially is to your decisions" and at the top of second column "indicate how frequently you currently use these accounting tools from your existing accounting systems."

Table 4: Summary Table of Survey Questionnaires

Section	Marketers	Controllers
Section 1	Accounting for segment profitability analysis	Information on cost allocation
Section 2	The role of accounting information in marketing decisions	Accounting for segment profitability analysis
Section 3	Perception of marketers on market segment profitability analysis	Perception of controllers on market segment profitability analysis
Section 4	Information about the property	Information about the property
Section 5	Information about the respondents	Information about the respondents

The third section was designed to explore the perception of marketers on market segment profitability analysis issues, sales and profitability volumes of different market segments. In the first part of this section, respondents were asked to mark their perception of the given 14 statements related to market segment profitability analysis issues. They were offered five choices in a Likert-type scale ranging from 1 (definitely disagree) to 5 (definitely agree). In the second part of this section, respondents were asked to rank the sales and profitability volumes of six different market segments (aircrews, conference groups, group travelers, corporate travelers, leisure, and other) from least to most. Number 1 indicated the highest sales volume (or profitability) and number 6 indicated the lowest sales volume (or profitability).

The fourth section of the questionnaire was related to descriptive characteristics of the lodging properties, such as ownership/management type, the segment of the property, location of the property, number of employees, the number of rooms available, and departments of the property. The fifth section asked personal questions related to position, gender, educational level and professional industry experience.

3.6.2 Controllers' Questionnaire

The first section had 10 questions related to the current cost allocation methods used in the property and the perception of controllers on the cost allocation issues. The second section of the questionnaire was related to the market segment profitability issues, such as the agreement of respondents on the cost allocation among market segments, using any method to measure the profitability of each market segment, and the reasons of not using MSPA. Section two of the controllers' survey was the same as the first section of the marketers' questionnaire. The third section asked controllers their perceptions on market segment profitability analysis issues, and sales and profitability volumes of different market segments. The questions of this section were similar to marketers'.

The fourth section of the questionnaire was related to the characteristics of the lodging properties as with the marketers' questionnaire and, finally the fifth part of the questionnaire contained personal information about the respondents such as title of position, gender, educational level and professional experience in the industry.

3.7 Data Collection

Data for the study were gathered by means of a mixed mode methodology: a web-based and a postal mailed questionnaire that were developed specifically for this study. The major advantage of the web-based questionnaire survey is the ability to survey a large diverse sample at a relatively low cost and high response rate (Cobanoglu, 2001; Dillman, 1999). In addition to these efficiencies, online respondents may view online surveys as more interesting and enjoyable than traditional surveys. In addition to the web-based survey, traditional mailed surveys were also used to reach the target population members who did not have an email address or did not respond to the web-based survey. Data collection for this study was completed in two phases: (1) Hotel controllers and (2) Hotel sales/marketing managers. Data collection for both stages was conducted in a similar manner.

3.7.1 Data Collection from Hotel Controllers

Data from controllers were collected in July and August 2002, through a web-based and postal mail survey. Eight hundred-seventy members were selected from the database of HFTP, which contains 2,200 professionals working as financial and technology professionals in different lodging properties with different titles. Eight hundred-seventy members were selected because they were holding hotel controller or similar positions in individual lodging properties in the U.S. whom were the target sample of this population. An email message describing the purpose of the study was sent to 853 members - who were provided an e-mail address - of the HFTP and were invited to fill out a web-based questionnaire at http://osuhrad.com/samsurveycpa. Of this, 220 e-mails were returned for different reasons. Net usable response number was 633 when the returned e-mails were subtracted (853-220=633). During the first two weeks, 140 responses were received from the respondents and this yielded a 22% response rate (140/633=22.1%). For the seventeen members who did not have e-mail addresses, surveys were sent by regular U.S. postal mail. Three responses were received from this survey. This yielded 17.6% response rate (3/17=17.6%). Therefore, the total number of respondents reached 143 for an overall response rate was 22% (143/650=22%).

3.7.2 Data Collection from Hotel Marketers

Data from the hotel marketers were collected from December 2002 through March 2003. Nine hundred fifty-seven members of the HSMAI who were holding a sales/marketing or a similar managerial position in the lodging properties in the U.S. were the second target sample of the survey population. Nine hundred fifty-seven e-mails were sent to this sample in December 2002. An e-mail message expressing the purpose of the study was sent to respondents who were invited to participate in a survey at (www.osuhrad.com/surveys/market/) by highlighting the web-based address in the invitation message. One hundred and eighty-eight e-mail messages were returned for different reasons. Therefore, net usable sample number was reduced to 769 (957-188=769). It was assumed that all recipients read and understood the content of the message. Sixty-four respondents filled out the survey within two weeks. Total response rate for this survey was 8.3% (64/769=8.3%).

Based on the unexpected low response rate of the web-based survey, a new step was included in the process: A postal mail survey with an enclosed gift to encourage managers to participate. Three hundred names were randomly selected from the HSMAI name list that were selected as the sample for this study by excluding 64 names that already replied to the web-based survey (957-64=893). Three hundred postal mails were sent. Five of the mailings were returned by the post office for different reasons. Twenty-two of the members returned the questionnaires and this yielded 7.5% response rate (22/295=7.5 %). At the end, total response from hotel marketers totaled 86 and this resulted in a 10.3% overall response rate.

Non-response bias was assessed for the sample by comparing demographic characteristics of early and late respondents (Warmbrod, 2001). Early respondents were identified as those responding in the first two days of data collection, and late respondents were identified as those responding in the last two days of data collection. Comparison of early and late respondents yielded the same results. Thus, non-response bias does not appear to be a problem with the samples.

3.8 Data Analysis

The collected data was analyzed by using Statistical Package for Social Science for windows (SPSS) version 11.0. Both descriptive and inferential statistics were used in this study in analyzing the data from the both surveys.

Descriptive statistics were used as a representation of the data, which described the results of the research or what happened in the study (Gary, 1992). These statistics were primarily used in analyzing the demographic variables, characteristics of the lodging properties and current cost and market segment profitability analysis methods used by the lodging properties. Demographic data obtained from the questionnaires was tabulated using frequency, percentages and means. Means were used to describe the set of perceptions of respondents for the accounting tools used in marketing decisions.

Inferential statistics methods were used to draw inferences or generalizations about the population of hotel marketers and controllers. The mean differences on the perceptions of potential and existing values of the accounting information derived from the current accounting system were tested by paired sample *t*-tests. Finally, independent sample *t*-tests were employed to determine if there was any mean differences between the hotel controllers and marketers on specific issues related to market segment profitability and the use of accounting information in marketing decisions.

3.9 Validity and Reliability

Validity is the degree of fit between theoretical constructs and their operational indicators (Nachimas & Nachimas, 1987). Any measurement instrument that accurately measures what it is intended to measure may be considered as valid. The validity (the degree to which the questionnaire measures wellness) was achieved through content and face validity. Content validity is based on the extent to which a measurement reflects the specific intended domain of content (Carmines & Zeller, 1991). The content validity of wellness was achieved by adopting the validated questionnaire from the study of Foster and Gupta (1994) in the second part of the marketers questionnaire. The remaining part was developed based on the literature review, interviews with lodging professionals, and academic faculty members.

Reliability is the extent to which an experiment, test, or any measuring procedure yields the same result on repeated trials. The reliability of multi-item measures was assessed by calculating coefficient alpha (See Table 5). In this study internal reliability were addressed for the value of accounting information in marketing decisions, and perception of marketers and controllers on the specific statements of market segment profitability analysis.

Table 5: Reliability Scales for Marketers and Controller's Surveys

Variables	No. of items	Cronbach's Alpha
Marketers Section 2		
Potential and Existing Value of the Accounting Information (Potential Value)		
Marketing /Business decisions	4	0.81
Cost Related decisions for different market segments	5	0.82
Importance and Frequency of the Accounting Information		
Cost breakdown, CVP analysis and budgeting	4	0.71
Product/service profitability analysis + CPA	4	0.74
Standard and variance analysis for sales and revenue	3	0.90
Standard and variance analysis for marketing costs	4	0.92
Potential and Existing Value of the Accounting Information (Existing Value)		
Marketing /Business decisions	4	0.84
Cost Related decisions for different market segments	5	0.81
Importance and Frequency of the Accounting Information		
Cost breakdown, CVP analysis and budgeting	4	0.77
Product/service profitability analysis + CPA	4	0.81
Standard and variance analysis for sales and revenue	3	0.86
Standard and variance analysis for marketing costs	4	0.93
Marketers Section 3		
Perception of Marketers on Market Segment Profitability Analysis		
Market Segment profitability analysis	4	0.60
Accounting systems	4	0.63
Costing systems	4	0.79
Pricing decisions	2	0.76
Controllers Section 3		
Perception of Marketers on Market Segment Profitability Analysis		
Market Segment profitability analysis	5	0.63
Accounting systems	4	0.78
Costing systems	5	0.70
Pricing decisions	2	0.66

3.10 Limitations and Assumptions

Several limitations and assumptions should be considered in order to interpret the findings of this study. This study had the following limitations: (1) Samples were drawn from the industry organizations, such as Hospitality Financial and Technology Professionals (HFTP) and Hospitality Sales and Marketing Associations International (HSMAI). Therefore, the findings cannot be generalized beyond these target populations, (2) The response rate was 22% for HFTP members and 10.3% for HSMAI members, which means that all members of these organizations were not fully represented. (3) This study employed a mixed mode methodology where a big portion of the survey data was collected through web-based method and a small portion with mailed survey.

The major potential problem with using mixed-mode surveys defined as the measurement differences between modes (Schwarz *et al.*, 1992; Dillman, 1999). These differences may even result in different analytical conclusions and recommendations, (4) The sample size for marketers (n=86) and for controllers (n=143) was relatively small. This may represent a relatively large sampling error. Generally, the more people being surveyed (sample size), the smaller the sampling error will be. According to Salant and Dillman (1994), obtaining 90 or more completed questionnaires allows researchers to be 95% confident that estimates will result in a sampling error of less than 10%.

It was assumed that different data collection methods did not affect the responses. It was also assumed that the respondents would complete the questionnaire objectively, according to their professional ethics, knowledge and industry experience. Further, perception based responses were elicited from controller and marketers. However, human perception is to certain degree subject to intentional and unintentional error.

3.11 Summary of Chapter 3

This chapter outlined the research methodology used in the study. Detailed information on the type of research design, population and sampling plan, research instruments of the survey, and data collection techniques were explained. Data analysis and statistical methods used in this study were given. Validity and reliability of the data collected through the questionnaires were assessed. Finally, the limitations and assumptions of the study were explained.

CHAPTER IV

DATA ANALYSIS AND RESEARCH FINDINGS

4.1 Overview

The purpose of this study was (1) to evaluate the existing literature by linking research issues related to market segment profitability analysis, (2) to describe how marketing managers evaluate the accounting information provided by the current accounting systems in order to make better marketing decisions (3) to describe how marketers and controllers assess the value of market segment profitability analysis, and (4) to discuss future research directions in light of accounting and marketing applications.

Within this conceptual framework the specific objectives of this study were to:

1. Find out the level of agreement between marketers and controllers concerning the full cost allocation among different market segments.
2. Compare the potential and existing value of the accounting information as perceived by the marketers used in marketing decisions.
3. Find out the importance and frequency of use of specific accounting tools in marketing decision-making related to market segment profitability analysis.
4. Find out the importance and frequency of use of specific accounting tools in marketing decision-making related to market segment profitability analysis.

5. Compare hotel marketers' and hotel controllers' perceptions on market segment profitability issues.

This chapter presents the data analysis and research findings. It is divided into six sections. It provides the demographic information of the respondents, characteristics of the lodging properties, the results of descriptive statistics, data analysis, and hypothesis testing.

The first section of the chapter summarizes the response rates of marketers' and controllers' surveys. Profiles of the respondents and the characteristics of the lodging properties were provided in the second section. The third section provides the descriptive statistical data for the "Accounting for Segment Profitability Analysis." Section 4 is about "Gap Analysis in the Value of Accounting Information in Marketing Decisions." This section illustrates the descriptive data and inferential statistical analysis results where research hypotheses were tested by employing the paired sample *t*-tests. In the fifth section, descriptive statistical data was provided on the sales volume and profitability of different market segments. In the last section, descriptive statistical data was provided and independent sample mean *t*-tests were employed to compare perceptions of marketers and controllers on the market segment profitability.

4.2 Response Rate

As explained in Chapter 3, this study consisted of two different surveys conducted with hotel marketers and hotel controllers. The overall survey response rate was 10.3 %

for marketers and 22.1% for controllers. More specific information on sample sizes and response rates is provided in Table 7.

4.2.1 Response Rate for Hotel Marketers Survey

A web-based questionnaire and postal mail instrument was used to collect data from marketers. Nine hundred and fifty-seven e-mails carrying an invitation message were sent to the members of the Hospitality Sales and Marketing Association International (HSMAI). In the message, the members were invited to visit the web site of the survey and fill out the questionnaire. One hundred eighty-eight emails were not delivered due to incorrect or cancelled e-mail addresses or similar reasons. This resulted in a reduced net usable sample size of 769 (957-188=769). The web-based survey received 64 responses within two weeks and yielded an 8.3% response rate (64/769=8.3%). Since the response rate was lower than expected, it was decided to augment the e-mail survey with a postal mail survey.

On an average, the response rates in the hospitality research surveys range from 10.5% to 30.7% (Crawford-Welch, 1991; Dillman, 1999; Cobanoglu, 2001). According to Salant and Dillman (1994), obtaining 90 or more completed questionnaires allows researchers to be 95% confident that estimates will result in a sampling error of less than 10%. In order to obtain 90 total responses from the survey, at least 26 additional responses were needed (90-64=26). With a conservative expectation to receive a 10% response rate, 260 additional surveys needed to be sent by mail (26x10=260). It was decided to send 300 hundred surveys (40 more than the calculated) to secure the minimum 26 responses. Three hundred names were randomly selected from the aforementioned HSMAI name list after excluding 64 names that already replied to the web-based survey (957-64=893). Three hundred postal mail surveys were sent. Five of the mailings were not delivered and were returned by the post office. Thus, the total net postal mail sent delivered was 295. Twenty-two of the 295 members responded yielding a 7.5% response rate (22/295=7.5%) that was again lower than expected

Table 7: Sample Sizes and Response Rates

Instrument	Sample and response	Controllers	Marketers
	Sample	853	957
	Number not deliverable	220	188
	Percent not deliverable	25.8%	19.6%
Web-based	Net number usable	633	769
	Responses	140	64
	Raw response rate (%)	16.4%	6.7%
	Usable response rate (%)	22.1%	8.3%
	Sample	17	300[1]
	Number not deliverable	0	5
	Percent not deliverable	-	1.7%
Postal Mail	Net number usable	17	295
	Responses	3	22
	Raw response rate (%)	17.6%	7.3%
	Usable response rate (%)	17.6%	7.5%
	Sample	870	1257
	Number not deliverable	220	193
	Percent not deliverable	25.3%	15.3%
Overall	Net number usable	650	833[2]
	Responses	143	86
	Raw response rate (%)	16.4%	0.07%
	Overall usable response rate (%)	22.0%	10.3% [3]

[1] Drawn from the main sample by excluding the response number of web-based survey (957-64=893)
Drawn percentage (300/893=33.6%)
[2] Net usable of e-mail + Net usable of postal mail –minus- mail responses (769+295-231= 833)
[3] It reflects the sample-received e-mail + mail, but not both-excludes both receivers.
Number of double receivers=usable mail number minus e-mail responses (295-64=231)

Finally, total response number from the hotel marketers (both e-mail and mail) totaled 86, yielding a 10.3% overall usable response rate. Double receivers (295-64=231 receivers) who received both e-mail and postal mail were deducted from the total usable sample size (769+295-231) when overall response rate was calculated (769+295-231=833). Thus, the overall usable sample size was found to be 833 when double receivers were eliminated (86/833=10.3%). Although the total number of responses was under 90 and lower than expected, it was decided not to perform additional mailings because of the restriction of completing the study within a given time frame.

4.2.2 Response Rate for Hotel Controllers Survey

The total sample size of the controllers was 870 consisting of 853 e-mails and 17 postal mail addresses. A web-based questionnaire and postal mail questionnaire was used as the survey instruments. Eight hundred fifty-three e-mails carrying an invitation message were sent to the e-mail addresses of Hospitality Financial and Technology Professional (HFTP) members. The members were invited to visit the survey web site and fill out the questionnaire. Two hundred and twenty e-mails were not delivered due to permanent fatal errors, cancelled addresses or other reasons. Therefore, the net usable sample number was reduced to six hundred thirty-three when undelivered e-mails were subtracted from the sample number (853-220=633). Seven potential respondents declined to participate by indicating that corporate policy did not allow them to participate in such surveys. The web-based survey received 140 responses and yielded a 22.1% response rate. An additional 17 postal mail surveys were sent to the members who did not have an e-mail address in the membership database. Three responses were received from this sample, a 17.6% response rate (3/17=17.6%). Thus, the total response number from controllers both web-based and postal mail- reached 143 and this yielded a 22.1% total response rate (143/650=22.0%).

4.3 Profile of Respondents

This section provides the respondents' profiles, the hotel marketers and hotel controllers, and the characteristics of the lodging properties where they were employed. Profiles of the respondents, such as the position title, gender, and education level, years of experience in the hospitality industry, and the characteristics of the lodging properties (such as management/ownership type, the industry segment of the property, location, and number of rooms available) are summarized in Tables 8 and 9.

4.3.1 Profile of the Hotel Marketers

The profile of the marketers was examined in four areas: (1) position held, (2) gender, (3) educational level, and (4) professional experience.

The majority of the respondents (58.1%) had a title of "Director of Sales and Marketing." The respondents who had a title of 'Sales Manager" were 22.3% of the total. The remainder of the marketers (18.6%) had other titles, including "Marketing Manager," "Assistant Sales Manager," and "Assistant Marketing Manager."

Table 8: Profile of Marketers and Controllers

Profile of Marketers			Profile of Controllers		
Position held	**F[1]**	**%**	**Position held**	**F[1]**	**%**
Director of Sales and Marketing	50	58.1	Controller/Financial Controller	109	76.2
Sales Manager	20	23.3	Assistant Controller	5	3.5
Marketing Manager	7	8.1	Director of Finance	10	7.0
Assistant Sales Manager	3	3.5	Assistant Director of Finance	1	0.7
Assistant Marketing Manager	2	2.3	Director of Finance/Accounting	11	7.7
Other	4	4.7	Accounting Manager	3	2.1
Total	86	100.0	Other	4	2.8
			Total	143	100.0
Gender			**Gender**		
Female	51	59.3	Female	28	19.6
Male	35	40.7	Male	115	80.4
Total	86	100.0	Total	143	100.0
Educational level			**Educational level**		
High school	8	9.3	High school	5	3.5
Associate	19	22.1	Associate	17	11.9
Bachelor	49	57.0	Bachelor	94	65.7
Other	10	11.6	Other	27	18.9
Total	86	100.0	Total	143	100.0
Professional experience			**Professional experience**		
0-2 years	6	7.0	0-2 years	1	0.7
3-5 years	12	14.0	3-5 years	9	6.3
6-10 years	29	33.7	6-10 years	20	14.0
11-16 years	38	44.2	11-16 years	33	23.1
Over 16 years	1	1.2	Over 16 years	80	55.9
Total	86	100.0	Total	143	100.0

[1] Frequency

Almost 60% of the hotel marketers were females (59.3 %) and 40 % were males (40.7 %). In regard to educational background, more than half of the marketers (57.0%) had at least a bachelors degree, while 22.1% had an associates degree. The remaining of 43% held 'other' degrees that were not specified. Nearly half of the marketers (44.2%) had 11 to 16 years experience, six (7.0%) had only 0 to 2 years experience, and 1.2 % had more than 16 years experience. Others had different levels of experience (see Table 8 for detailed information).

4.3.2 Profile of the Hotel Controllers

The profile of the controllers was grouped identically to that of the marketers: position held, gender, educational level, and professional experience.

The majority of the hotel controllers (76.2%) had hotel 'controllers/financial controller' titles. The other two major titles were 'Director of Finance/Accounting' (7.7%) and 'Director of Finance' (7.0%). The remaining 9.1% of the respondents held other titles, such as 'Assistant Controller,' 'Accounting Manager,' or 'Assistant Accounting Manager.'

Among controllers, the majority were males (80.4%), and 19.6% were females. More than 65 percent of the controllers (65.7%) had at least a bachelors degree and 11.9 % had associate degree. When respondents marked "other" as the educational level, they were allowed to indicate the type of 'other' degree. Most respondents indicated 'other' as masters degree when specified.

The controllers with over 16 years of experience comprised 55.9% of the total. Twenty-three percent of the respondents had 11 to 16 years of experience, 14.0% had six to ten years, and 6.3% had three to five years of experience.

4.4 Characteristics of the Lodging Properties

This section provides statistical data about the characteristics of the lodging properties. Characteristics of the lodging properties were divided into five categories: (1) ownership/management type, (2) segment of the property, (3) location of the property, (4) number of employees, and (5) number of rooms available in the property.

4.4.1 Characteristics of the Marketers' Properties

The ownership/management types of the marketers' properties were grouped into five categories. (1) chain owned/operated, (2) franchise/management contract, (3) franchise/independent management, (4) independently owned, and (5) other.

Twenty-seven respondents (31.8%) indicated that their properties were 'independently owned.' Twenty-four properties (28.2%) were operated under a 'franchise/management contract', 18 properties (21.2%) were 'chain owned/operated,' and 14 properties (16.5%) indicated 'franchise/independent management' contracts. Two respondents (2.4%) indicated that their properties were in the 'other' category.

Table 9: Characteristics of the Lodging Properties

Marketers' Properties			Controllers' Properties		
Ownership/Management type	F[1]	%	**Ownership/Management type**	F[1]	%
Chain owned/operated	18	20.9	Chain owned/operated	38	26.6
Franchise/Management contract	25	29.1	Franchise/Management contract	45	31.5
Franchise/Independ. management	14	16.3	Franchise/Independ. management	16	11.2
Independent owned	27	31.4	Independent owned	39	27.3
Other	2	2.3	Other	5	3.5
Total	86	100.0	Total	143	100.0
The segment of the property			**The segment of the property**		
All suite	4	2.8	All suite	5	3.5
Luxury	10	7.0	Luxury	30	21.0
Upscale	38	40.0	Upscale	57	40.0
Mid-price	27	18.9	Mid-price	41	28.7
Economy/Budget	2	1.4	Economy/Budget	2	1.4
Casino	4	2.8	Casino	2	1.4
Other	1	0.7	Other	6	4.2
Total	86	100.0	Total	143	100.0
The location of the property			**The location of the property**		
Downtown	35	40.7	Downtown	56	39.2
Resort	26	30.2	Resort	45	31.5
Airport	7	8.1	Airport	14	9.8
Highway	5	5.8	Highway	11	7.7
Other	13	15.1	Other	17	11.9
Total	86	100.0	Total	143	100.0
The number rooms of the property			**The number rooms of the property**		
Under 100 rooms	4	4.7	Under 100 rooms	9	6.3
101-200 "	27	31.4	101-200 "	24	16.8
201-300 "	16	18.6	201-300 "	39	27.3
301-500 "	27	31.4	301-500 "	42	29.4
Over 500 "	12	14.0	Over 500 "	29	20.3
Total	86	100.0	Total	143	100.0

[1] Frequency

The industry segments of the lodging properties for marketers were as follows: Thirty-eight properties (44.7%) belonged to the 'upscale' category, 26 properties (30.6%) were in the 'mid-price' category, and 10 of the properties (11.8%) fell into the 'luxury' category. The rest of the other properties (13.0%) were in the "other" category.

The location of the properties for marketers showed a similar pattern as controllers. The number of 'downtown properties' was 35 (41.2%). The second largest category (20 properties) was 'resort properties' (30.6%). The number of 'airport hotels' were seven (8.2 %). Five 'highway hotels' had 5.9% of this category. The 'other' category consists of twelve properties with 14.1% of the total.

The number of available rooms in the properties of marketers had the following characteristics. Twenty-seven properties (31.8%) had 101 to 200 rooms; 26 properties (30.6%) had 301 to 500 rooms. Sixteen properties (18.8%) had 201 to 300 rooms. Twelve properties had more than 500 rooms (14.1 % of total properties). Four of the properties had fewer than 100 rooms (4.7%).

4.4.2 Characteristics of the Controllers' Properties

The characteristics of the lodging properties were classified in the same way as the hotel marketers'. The frequency information for the lodging properties is as follows: Forty-five of the 143 properties (31.5 %) were franchise/management-contracted properties. There were 39 properties in the independently owned category (27.3%). The number of chain owned/operated properties was 38 (26.6%). The rest of the properties had different types of management (see Table 9).

The segment of the properties were divided into seven characteristics: (1) all suite, (2) luxury, (3) upscale, (4) mid-price, (5) economy/budget, (6) casino and (7) "other" segments. Fifty-seven properties (40.0%) were categorized as "upscale" segment properties, while 41properties (28.7%) were in the "mid-price" segment. Thirty properties (21.0%) were in the "luxury" segment. The remaining fifteen properties (10.5 %) belonged to other categories, such as "all-suite," "economy/budget," "casino hotels," and "other."

The location of the properties was divided into five categories. Fifty-six were downtown properties (39.2%), a big portion of the total. Forty-five properties (31.5%) were "resort hotels," while fourteen properties (9.8%) were "airport hotels." Eleven properties were classified as "highway properties" (7.7%), and 17 properties (11.9%) were in the "other" category.

"Number of rooms available" was one of the other characteristics of the properties. Forty-two properties or 29.4% of the total, had 301 to 500 rooms. Thirty-nine of the properties (27.3%) had 201-300 rooms. Twenty-nine of the properties (20.3%) had over 500 rooms, and 24 properties (16.8%) had 101-200 rooms. Nine of the properties (6.3%) had fewer than 100 rooms.

4.5 Descriptive Statistical Analysis: Usage of Market Segment Profitability Analysis

This section includes the descriptive statistical data collected from marketers and controllers, such as frequency and means of 'the usage of market segment profitability measurement". The information given in this section reflects the perceptions of respondents about the full cost allocation of expenses among market segments, whether they currently use any method for market segment profitability analysis, the reasons for not using MSPA (if applicable) and the method used to evaluate the market segment profitability by their companies. Table 10 summarizes the descriptive statistical data for both marketers and controllers. An item-by-item analysis of this section follows:

4.5.1 The Level of Agreement on Cost Allocation among Market Segments

A Likert-type scale, ranging from 1 (definitely disagree) to 5 (definitely agree) was provided to respondents to reflect their level of agreement on cost allocation among market segments. Almost half of the marketers (45.4%) either agreed (38.4%) or strongly agreed (7.1%) that all company costs should be allocated among market segments. On the other hand, 26.7% of the marketers disagreed with this question (20.9% disagree and 5.8% definitely disagree). A substantial number of marketers (27.9%) were neutral and did not provide a positive or negative perception.

The majority of the controllers (61.6%) definitely agreed or agreed (41.3% definitely disagree and 20.3% disagree) that "all company costs both direct and indirect should be allocated among market segments." The percentage of 'neutral' controllers was 25.2% of the total and 13.3% of the controllers either agreed or definitely agreed (11.2% agree and 2.1% definitely agree).

The perceptions of marketers and controllers were quite different. While almost half of the respondents of the marketers (45.4%) either agreed (38.4%) or strongly disagreed (7.0%) on the statement, only 13.2% of the controllers agreed (11.2%) and disagreed (2.1%). The majority of the controllers (61.6%) had the

Table 10: Frequency Analysis on Accounting for Segment Profitability Analysis (Marketers and Controllers)

	Marketers		Controllers	
The level of agreement of cost allocation among market segments	Frequency	%	Frequency	%
Definitely disagree	5	5.8	29	20.3
Disagree	18	20.9	59	41.3
Neutral	24	27.9	36	25.2
Agree	33	38.4	16	11.2
Definitely agree	6	7.0	3	2.1
Total	**86**	**100.0**	**143**	**100.0**
Current usage of any method to measure the profitability of market segments	Frequency	%	Frequency	%
Yes	58	67.4	35	24.5
No	28	32.6	108	75.5
Total	**86**	**100.0**	**143**	**100.0**
Reasons for not using market segment profitability analysis	Frequency	%	Frequency	%
Not a common practice of USALI	2	7.1	26	23.6
Not requested by operator/management	14	50.0	23	21.4
Not implemented by corporate office	2	7.1	19	17.5
No sufficient knowledge/experience	3	10.7	11	10.5
Few application in industry	2	7.1	8	7.4
Not useful for our property	2	7.1	16	14.8
Other	3	11.7	5	4.8
Total	**28**	**100.0**	**108**	**100.0**
The current method to evaluate the market segment profitability	Frequency	%	Frequency	%
Sales alone method	25	43.0	12	34.3
Sales minus direct costs	16	27.9	11	31.4
Sales minus direct and indirect costs	12	20.9	10	28.6
Budgeted lifetime sales mines direct and indirect costs	3	4.7	0	0.0
Other	2	3.5	2	5.7
Total	**58**	**100.0**	**35**	**100.0**

opposite perceptions. Fifty-nine of the controllers disagreed (41.3%) and 29 controllers strongly disagreed (20.3%) with the same statement.

The descriptive statistical results show that while marketers accept the statement of full cost allocation among market segments, controllers were more conservative.

4.5.2 Current Usage of any Method to Measure the Profitability of Market Segments

Respondents were asked if they were currently using any method to measure the profitability of the market segments of their properties with "yes" or "no" choices. The responses on this question had different patterns among marketers and controllers. Fifty-eight of the marketers (67.4%) indicated that they were using and 28 marketers (32.6%) indicated that they were not using any method to measure the profitability of the market segments. Thirty-five of the controllers (24.5%) replied, "yes" to this question and the majority of them (75%) replied "no." It was found that the marketers and controllers showed different usage rate for using or not using any method to measure the profitability of the market segments of their properties.

4.5.3 Reasons for Not Using Market Segment Profitability Analysis

Those who had indicated that they were not using any method to measure the profitability of the market segments in the previous question had to identify the reasons. Seven possible reasons were provided to respondents to select. Among marketers, the main reason cited was 'Not requested by operator/management company' (50%). The second highest rated reason was 'No sufficient knowledge/experience' (10.7%). All other reasons received the same response rate (7.1%) for each alternative as provided in the questionnaire.

The controllers showed a different pattern than marketers for the above question. 'Not a common practice of USALI' was the main reason (23.6%) among controllers. 'Not requested by operator/management' was the second highest rated reason (21.4%). 'Not implemented by corporate office' was rated as the third reason by the controllers (17.5%).'Not useful for our property' (14.8%), 'no sufficient knowledge/experience' (10.5%), 'few application in the industry' (7.4%) and 'other' (4.8%) were other reasons for not using any method to measure the profitability of market segments.

Marketers and controllers in answering this question showed a different pattern. While half of the marketers (50%) agreed that 'Not requested by operator/management,' was the primary reason, only 21.4% of the controllers agreed on the same reason. 'Not a common practice of USALI' was the main reason among controllers. However, only 7.1% of the marketers agreed on this statement. Other alternative reasons had different frequencies among marketers and controllers (see table 10 for detailed information).

4.5.4 The Method to Evaluate Market Segment Profitability

Respondents who indicated that their property was using a method to measure the profitability of the market segments were asked to indicate the current method used. The majority of the marketers indicated that their properties were using the 'sales alone' method (43.0%). The second most used method was the 'sales minus direct costs' method

(27.9%). The 'Sales minus direct and indirect costs' method was the third (20.9%) among controllers' properties for measuring the profitability of market segments.

The 'sales alone method' was the most frequently used method (34.3%) in the controllers' properties. 'Sales minus direct cost' method was the second highest rated method (31.4%). 'Sales minus direct and indirect costs' rated as third method (28.6%). Other methods specified in the 'other' category comprised 5.7% of controllers' responses.

Among marketers and controllers, the 'sales alone method' was the primary method used by both marketers' and controllers' properties. About 43.0% of the marketers' and 34.3% of the controllers' properties used this method. 'Sales minus direct costs' method was the second highest rated method as indicated by both marketers and controllers with 27.9% and 31.4% respectfully. A total of 20.9% of the marketers and 28.6% of the controllers indicated that 'Sales minus direct and indirect costs' was another common method for measuring the profitability of the market segments.

4.6 The Value of Accounting Information in Marketing Decisions

This section summarizes the frequency and statistical analysis results of the data collected from marketers about the value of the accounting information that is used in marketing decisions related to MSPA. In this section, the selected accounting information that is provided by the existing accounting system of the lodging properties for market segment profitability analysis was examined.

This section is divided into two main categories and eight sub-categories as follows:

A. Potential and existing value of the accounting information

1. Marketing/business decisions
2. Cost related decisions for different market segments
3. Decisions how to allocate the total marketing budget among different market segments

B. Importance and frequency of use of the accounting information

1. Cost breakdowns, CVP and budgeting analysis
2. Product/service profitability analysis
3. Customer profitability analysis
4. Standards and variance analysis for sales and revenue
5. Standards and variance analysis for marketing costs

In the first part, the difference between potential and existing value of the accounting information (information gap) as perceived by the marketing professionals was investigated. Mean values and paired sample t-tests were employed to find the significant difference. Respondents were provided two columns to compare the potential and existing values of the accounting information in the given statements. Responses and statistical analyses of this part are summarized in Table 12 to Table 14. In Table 12, the first column shows the mean values of the potential value of the accounting information with a Likert-type scale ranging from 1 (least valuable) to 5 (most valuable). The second column shows the mean values of the existing accounting information. In Table 13 shows the mean values of the same variables ranked in order. Table 14 shows the statistical analysis results of the paired sample t-tests.

Table 12: Potential and Existing Value of the Accounting Information in Marketing Decisions (Mean values for 86 questionnaire responses*)

Accounting Information	Potential Value [1]	Existing Value [2]	Information Gap [3] **
1. Marketing/business decisions			
A. Pricing decisions	3.94	3.51	1.69
B. Customer mix decisions	3.69	3.27	1.55
C. Product/service mix decisions	3.60	3.22	1.37
D. New service development decisions	3.78	3.33	1.70
2. Cost related decisions for different market segments			
A. Advertising costs	4.09	3.74	1.43
B. Sales promotions costs	4.08	3.72	1.47
C. Sales force management costs	3.95	3.64	1.22
D. Public relations costs	3.41	3.06	1.19
3. Decision related to how to allocate the total marketing budget among different market segments	3.73	3.20	1.98

([1]) Potential Value= "How valuable accounting information potentially is to your decisions".
([2]) Existing Value = "How valuable information from your existing accounting system is to your decision"
([3]) Information Gap= Weighted differences in the mean response question 1 and question 2.
* Scale is 1=least valuable to 5= most valuable
** The weighted difference is given by the difference in the mean response for column 1 and 2 multiplied by the column 1.

In the second part of this section, the importance and the frequency of use of the selected accounting tools were compared. Mean values and paired sample t-tests were employed to disclose the statistically significant differences. Tables from 15 to 17 provide mean frequencies and statistical analysis results. In Table 15, the first column indicates the mean values of the potential importance of the accounting information and the second column indicates the mean values of the frequency of use of the accounting information. Table 16 shows the mean values of the same variables ranked in order and Table 17 shows the descriptive statistics results of the comparisons between potential importance and the frequency of use.

4.6.1 Potential and Existing Value of Accounting Information in Marketing Decisions

In this section, marketers were asked to supply feedback on the potential and existing value of the accounting information provided by the accounting department. The information provided by the current accounting system is important both as strategic and tactical decision tool and as a means of monitoring the current performance of the sales and marketing activities. If current information system is insufficient to support the sales and marketing decisions, firms will likely fail to meet the operational projections in the short and long term. Information about the customers, services and costs, and 'costs related to different market segments' are important for the firm performance and bottom line profitability. To measure the potential and existing value of the accounting information respondents were asked to provide their perceptions on five items Likert-type scale, ranging from 1 (least valuable) to 5 (most valuable) with the following questions:

In the first column, respondents were asked to "indicate how valuable accounting information potentially is to your decisions," and in the second column, to "indicate how valuable accounting information from your existing accounting system is to your decisions."

Table 12 provides the mean frequencies of both questions in column 1 and 2, across nine areas of accounting information which were grouped as follows:

1) Marketing/business decisions
2) Cost related decisions for different market segments
3) Decisions related to how to allocate the total marketing costs among different market segments

Mean differences between columns 1 and 2 were defined in column 3 of the table as "information gap" in the existing accounting systems for marketing decisions (a similar method used by Foster and Gupta, 1994 has been adopted in this section). The weighted differences were calculated by multiplying the mean differences of column 1 and 2, by the means of column 1. The weights were used because simple linear differences in the mean responses to questions 1 and 2 were not sufficient to explain the relative importance of the accounting information for the specific marketing decisions.

Table 13 was prepared based on Table 12 and shows the potential and existing value of the accounting information ranked in order. Accounting tools were ranked from 1 to 9 according to the mean values for each of the given accounting tool (1 represents the highest mean and 9 represents the lowest). The first five accounting tools on the table were ranked parallel in both columns. "Advertising costs," (ranked 1), "sales promotion costs " (ranked 2) and "salesforce management costs" (ranked 3) received higher values in terms of potential and existing value of the accounting information. "Pricing decisions" (ranked 4) and "new service development decisions" (ranked 5) were the following tools after first three. The remaining four accounting tools had different ranking in potential and existing value columns. In column 3, "information gap" indicates the dissatisfaction between potential and existing values of the accounting information. While the number 1 shows the highest gap (or dissatisfaction), number 9 shows the lowest. Therefore, the respondents were most dissatisfied with their existing accounting information, provided by the accounting department in the areas of (1) "decisions related to how to allocate the total marketing budget among market segments," (2) "new service development decisions," (3) "pricing decisions," and (4) "customer mix decisions." This high difference was perceived as an area where improvements in the current accounting information would be highly valued by marketers. Sales promotion costs, advertising costs, product/service mix decisions, sales-force management costs, and public relation costs decisions were ranked relatively low in their perceived information gap.

Table 13: Potential and Existing Value of the Accounting Information in Marketing Decisions (Ranked in order)

Accounting Information	Potential Values*	Existing Values*	Information Gap**
Advertising costs **(2 A)**	1	1	6
Sales promotions costs **(2 B)**	2	2	5
Sales force management costs **(2 C)**	3	3	8
Pricing decisions **(1A)**	4	4	3
New service development decisions **(1D)**	5	5	2
Decision related to how to allocate the total marketing budget among different market segments **(3)**	6	9	1
Customer mix decisions **(1B)**	7	6	4
Product/service mix decisions **(1C)**	8	7	7
Public relations costs **(2D)**	9	8	9

* 1 indicates highest and 9 indicates the lowest mean
** 1 indicates highest and 9 indicates the lowest gap between potential and existing value

4.6.2 Hypothesis Testing: Differences Between Potential and Existing Value

In order to determine whether there is a statistically significant difference (information gap) between the potential and existing value of the accounting information, the paired-sample mean *t*-test was employed for the nine areas of the accounting information provided by the current accounting system (See Table 14). Positive *t*- scores indicate that the potential value of a particular accounting information is higher than its existing value. A number less than 0.05 in the significance column indicates that the difference is statistically significant. The statistical results show that the accounting information given in the nine areas were significantly different between potential and existing value. Table 14 shows the statistical analysis results of the paired sample mean *t*-tests. In the table, potential and existing value of the accounting information related to marketing decisions were listed under three main categories:

Table 14: The Statistical Results of Potential and Existing Value of the Accounting Information in Marketing Decisions (n=86)*

Variables	Potential Value[1]		Existing Value[2]		Differences			
Marketing/business decisions	Mean	SD	Mean	SD	Mean	SD	t^3	Sig[4]
Pricing Decisions	3.94	1.131	3.51	1.125	0.43	1.012	3.942	0.000
Customer mix decisions	3.69	1.087	3.27	1.111	0.42	1.090	3.562	0.001
Product/service mix decisions	3.60	1.044	3.22	1.089	0.38	0.923	3.857	0.000
New service development decisions	3.78	1.142	3.33	1.183	0.45	1.059	3.971	0.000
Cost related decisions for different market segments								
Advertising costs	4.09	1.081	3.74	1.257	0.35	0.748	4.326	0.000
Sales promotion costs	4.08	0.985	3.72	1.175	0.36	1.073	3.116	0.003
Sales-force management costs	3.95	1.028	3.64	1.157	0.31	0.858	3.395	0.001
Public relations costs	3.41	1.172	3.06	1.268	0.35	1.146	2.824	0.006
Decisions how to allocate the total marketing budget among different market segments	3.73	1.111	3.20	1.362	0.53	1.271	3.902	0.000

[1]= Least valuable to 5= Most valuable
Potential value[1] = "How valuable accounting information potentially is to your decisions"
Existing value[2] = " How valuable information from your existing accounting system is to your decisions"
[3]= Paired sample *t* test
[4]= Significance
* Degrees of freedom (df) for all categories is 85.

1. Marketing/business decisions
2. Cost related decisions for different market segments
3. Decisions how to allocate the total marketing budget among different market segments.

Marketing/Business Decisions: There were four accounting information statements under this category: (1) Pricing decisions, (2) Customer mix decisions. (3) Product/service/mix decisions and (4) New service development decisions.

The paired sample *t*-test showed that all four statements were statistically different. The *t*- values and significance levels of the statement are as follows: Pricing decisions (t=3.942, sig.=0.000), new service development decisions (t=3.971, sig.= 0.000), customer mix decisions (t=3.562, sig=0.001), product/service mix decisions (t=3.857, sig=0.000), and new service development decisions (t=3.971, sig=0.000). The statistical results show that hotel marketers placed more importance on the potential value than the existing value. In other words, the current accounting information did not supply the same level of information as was expected by the marketers.

Cost Related Decisions for Different Market Segments: Lodging companies serve in a variety of different market segments in different volumes depending on the characteristics of the lodging properties. The characteristics of each market segment vary by their needs. Therefore, the marketing activities for each market segment might be highly different and thus the costs of these activities. Four cost information related to four different marketing activities were tested in terms of potential and existing value as perceived by the marketers: (1) advertising costs, (2) sales promotion costs, (3) salesforce management costs, and (4) public relation costs.

Paired sample mean *t*-tests resulted in significant differences for all cost accounting information stated here that is provided by the accounting system. The *t*- value and significance level for these cost accounting information were as the following: For "advertising costs" (t=4.326, sig.=0.000), for "sales promotion costs" (t=3.116, sig.=0.003), for "salesforce management costs" (t=3.395, sig=0.001), and for "public relation costs" was (t=2.824, sig=0.006).

The statistical results of the paired sample mean *t*-tests showed that the value of the cost information provided by the accounting department related to the four types of cost information was not as valuable as expected potential value by the marketers.

<u>Decisions on How to Allocate the Total Marketing Budget Among Market Segments</u>: A well-defined marketing budget is a good indicator that shows the main activities of a sales/marketing department by financial numbers. Financial numbers are the money volumes of those activities assigned to specific costs. Since each of the market segment costs are different from each other, the financial sources must be assigned to those activities by their market segments. The cost information related to operational results is produced by the accounting system. Thus, the marketers need to stand to the cost information provided by the accounting system, when they decide how to allocate the total marketing budget among different market segments.

The paired sample mean *t*-test results showed that there was a significant difference between potential and existing value of the accounting information related to "how to allocate the total marketing budget among different market segments" (t=3.902, sig.=0.000). This suggests that the information provided by the accounting department related to, "how to allocate total marketing budget among market segments" is under-valued by marketers. Therefore, information provided by the accounting department was not valuable as perceived by the marketers for making effective decisions.

4.6.3 Importance and Frequency of Use of the Accounting Information

In this section, marketers were asked to provide their perceptions related to the potential importance and the frequency of use of the accounting information for the selected accounting tools. Table 15 reports the mean values and the frequency of use of the selected accounting tools with perceived information gap. The data received from marketers were measured by a Likert-type scale ranging from 1 (least important) to 5 (most important) and 1 (least frequently) to 5 (most frequently) with the following questions:

In column 1 respondents were asked to "indicate how important each of these accounting tools potentially is to your marketing decisions." In column 2 "indicate how frequently you currently use these accounting tools from your existing accounting systems". Column 3 shows the perceived information gap between potential value and the frequency of use of the given accounting information. The mean value of the information gap ranged from 0.88 to 2.21.

Table 15: Potential Importance and the Frequency of use of the Accounting Information in Marketing Decisions (Mean values of 86 questionnaire responses***)

Accounting Information	Potential Importance* 1	Frequency of Use * 2	Frequency Gap ** 3
1. Cost breakdown, CVP analysis and budgeting			
A. Fixed vs. variable cost breakdowns	3.51	2.97	1.90
B. Cost volume profit analysis	3.72	3.27	1.67
C. Fixed budgets	3.67	3.35	1.17
D. Flexible budgets	3.88	3.31	2.21
2. Product/service profitability analysis			
A. With only direct costs allocated to product/services	3.53	3.28	0.88
B. With full costs allocated to products/services	3.62	3.15	1.70
3. Customer Profitability Analysis			
A. With only direct costs allocated to products/services	3.52	3.22	1.02
B. With full costs allocated to products/services	3.65	3.17	1.75
4. Standard and variance analysis for sales and revenue			
A. Sales mix	3.93	3.44	1.93
B. Sales volume	4.13	3.78	1.45
C. Market share	3.97	3.47	1.99
5. Standard and variance analysis for marketing costs			
A. Advertising costs	3.74	3.45	1.08
B. Sales promotion costs	3.85	3.52	1.27
C. Direct mailing costs	3.72	3.33	1.45
D. Sales trips/trade shows	3.84	3.57	1.08

(1) Potential Importance = "How important each of these accounting tools potentially is to your decisions".
(2) Frequency of use = "How frequently you currently use these accounting tools from your existing Accounting systems"
(3) Information Gap = Weighted differences in the mean response question 1 and question 2.
* Scale from 1= least valuable to 5= most valuable
** The weighted difference is given by the difference in the mean response for column 1 and on 2 multiplied by the mean response for column 1.
*** Degrees of freedom (df) in all categories is 85.

Table 16 illustrates the mean values of the accounting tools ranked in order. In column one, 14 accounting tools were ranked in order. Sales volume (item 1), market share (item 2), sales mix (item 3), and flexible budget (item 4) received higher values in terms of potential importance.

Table 16: Potential Importance and the Frequency of Use of Accounting Information in Marketing Decisions (ranked in order)

Accounting Information	Potential importance* 1	Frequency of use* 2	Frequency Gap** 3
Sales volume **(4B)**	1	1	8
Market share **(4C)**	2	4	2
Sales mix **(4A)**	3	6	3
Flexible budgets **(1D)**	4	9	1
Sales promotion costs **(5B)**	5	3	9
Sales trips/trade shows **(5D)**	6	2	11
Advertising costs **(5A)**	7	5	11
Direct mailing costs **(5C)**	8	8	8
Cost volume profit analysis **(1B)**	7	11	7
Fixed budgets **(1C)**	9	7	10
Customer Profitability Analysis-With full costs allocated to products/services **(3B)**	10	13	5
Product/service profitability analysis -With full costs allocated to products/services **(2B)**	11	14	6
Product/service profitability Analysis - With only direct costs allocated to product/services **(2A)**	12	10	13
Customer Profitability Analysis – With only direct costs allocated to products/services **(3A)**	13	12	12
Fixed vs. variable cost breakdowns **(1A)**	14	15	4

* Scale from 1= least valuable to 5= most valuable
** 1 Indicates highest and 9 indicates the lowest gap between potential importance and frequency of use.

Several conclusions can be drawn from this table. First, it seemed that marketing managers put high importance on the tools providing revenue information. The first three items are revenue and market share related items. Cost related items received less importance from the marketers. This supports the general view of marketing approach that the marketing has traditionally focused on revenues and the attraction of customers.

Second, "customer profitability analysis with full costs allocated to products/services" was more important than "product/service profitability analysis-with full costs allocated to products/services". Marketers suggest that full cost allocation to market segments rather than departments or products is more useful for their decision making. These findings are consistent with the findings that a high proportion (67 %) of hotel marketers are currently using a market segment evaluation method. Another conclusion of this table is that there is a considerable gap between the potential importance and the frequency of use of the accounting information from the existing accounting system. The gap between the importance and frequency of use provides important information. The highest value in the perceived information gap column is 2.21 for the "flexible budget." Similarly, "market share "1.99, "sales mix" 1.93, and "fixed vs. variable costs" 1.90 were found with high information gap. Hotel marketers showed that the above four accounting information (flexible budget, market share, sales mix, and "fixed vs. variable costs) was not frequently used as expected for better marketing decision-making.

Table 17 reports the statistical analysis results of the data collected from marketers. Paired sample *t*-tests were employed for statistical analysis based on the means of the potential importance and the use of frequency of the selected accounting tools. The statistical analysis results were reported under five main categories as follows:

1. Cost breakdown, CVP analysis and budgeting
2. Product/service profitability analysis
3. Customer profitability analysis
4. Standards and variance analysis for sales and revenue
5. Standards and variance analysis for marketing costs

Table 17: Importance and Frequency of use of Accounting Information for Marketing Decisions (n=86)*

Variables	Potential Importance[1]		Frequency of use[2]		Differences			
	Mean	SD	Mean	SD	Mean	SD	t[3]	Sig[4]
Cost breakdown, CVP analysis and budgeting								
Fixed vs. variable costs breakdowns	3.51	1.135	2.97	1.26	0.55	1.09	4.642	0.000
Cost volume profit analysis	3.72	1.013	3.27	1.172	0.45	1.04	4.057	0.000
Fixed budgets	3.67	1.163	3.35	1.206	0.33	0.89	3.404	0.001
Flexible budgets	3.88	0.987	3.31	1.201	0.57	1.17	4.502	0.000
Product/service profitability analysis								
With only direct costs allocated to products/services	3.53	1.059	3.28	1.175	0.26	1.05	2.251	0.027
With full costs allocated to product/service	3.62	0.972	3.15	1.101	0.47	1.04	4.16	0.000
Customer Profitability Analysis								
With only direct costs allocated to products/services	3.51	1.103	3.22	1.231	0.29	1.03	2.624	0.010
With full costs allocated to product/services	3.65	0.967	3.17	1.15	0.48	1.12	3.932	0.000
Standard and variance analysis for sales and revenue								
Sales mix	3.93	0.955	3.44	1.214	0.49	1.15	3.955	0.000
Sales volume	4.13	0.943	3.78	1.131	0.35	0.78	4.155	0.000
Market share	3.97	1.089	3.47	1.243	0.5	1.16	4.013	0.000
Standard and variance analysis for marketing costs								
Advertising costs	3.74	1.065	3.45	1.233	0.29	0.91	2.976	0.004
Sales promotion costs	3.85	0.964	3.52	1.185	0.33	1.05	2.888	0.005
Direct mailing costs	3.72	1.07	3.33	1.202	0.4	1.03	3.552	0.001
Sales trips/trade shows	3.85	1.000	3.57	1.213	0.28	0.95	2.714	0.008

Scale[1] 1= Least importance to 5= Most importance
Scale[2] 1= Least frequently to 5= Most frequently
[1]Potential importance = "How importance accounting tools potentially is to your decisions"
[2]Frequency of use = "How frequently you currently use these accounting tools from your existing accounting systems"
[3]= Paired sample t- test
[4]= Significance
* Degrees of freedom (df) in all categories is 85.

4.6.4 Hypothesis Testing: Differences Between Importance and Frequency of Use

In order to determine whether there is a statistically significant difference (frequency gap) between the importance and the frequency of use of the accounting information, the paired-sample *t*-test was employed in the five areas of the accounting information (See Table 17). Positive *t*- scores indicate that the importance of particular accounting information is higher than its frequency of use. A number less than 0.05 level in the significance column indicates that the difference is statistically significant. The statistical results show that the accounting information provided to marketers given in the five areas were significantly different between the importance and frequency. Table 17 shows the statistical analysis results of the paired-sample *t*-tests. In the table, the importance and frequency of use of the accounting information related to marketing decisions were listed under five main categories.

<u>Cost Breakdown CVP Analysis and Budgeting</u>: There were four accounting tools classified under this sub-group: (1) fixed vs. variable cost breakdowns, (2) cost volume profit analysis, (3) fixed budgets, and (4) flexible budgets. The mean values of the potential importance of these tools were between 3.51 and 3.88, and the mean values of the frequency of use are between 2.97 and 3.35. Among these four accounting tools, "flexible budgets" indicated the highest mean value 3.88 in potential importance, and "fixed vs. variable cost breakdown" received the lowest mean value 3.51. The mean of "fixed budgets" was the highest 3.31 in frequency of use and "fixed vs. variable cost breakdown" was the lowest 2.97.

The paired sample t-test results for this section showed that there were significant differences in the potential importance and their frequency of use of the accounting tools. All four tools tested were significantly different. The paired sample t- test showed that hotel marketers placed higher importance on the specific accounting tools, than their frequency of use. In other words, the uses of these four tools were lower than their potential importance.

Product/Service Profitability Analysis: Two accounting tools were examined under this group: (1) Product/service profitability analysis with only direct costs allocated to product/services and (2) product/service profitability analysis with full costs allocated to product/services. The mean of the first, for the potential importance was 3.53 and frequency of use was 3.28. Similarly, the mean of the second for the potential importance was 3.62 and for the frequency of use was 3.15.

The paired sample t-test found that there were significant differences in the two accounting tools (for the first t=2.251 and sig=0.027 and for the second t=4.16 and sig= 0.000). Therefore, the actual frequencies of the use of these accounting tools were lower than their perceived importance.

Customer Profitability Analysis: Two given accounting tools were examined under this group: (1) Customer profitability analysis with only direct costs allocated to products/services and (2) with full costs allocated to product/services. The mean value of the first, for the potential importance is 3.51 and frequency of use is 3.22. The mean value of the second, for the potential importance is 3.65 and the frequency of use is 3.17.

The results of the paired sample *t*-test showed that two accounting tools under this category was significantly different (t=2.624 and sig=0.010; t=3.932 and 0.000). These results showed a similar pattern with product/service profitability analysis, as explained in the preceding section.

Standards and Variance Analysis for Sales and Revenues: Three accounting tools were examined in this group: (1) sales mix, (2) sales promotion costs, and (3) market share. The sales volume had the highest means in terms of importance 4.13 and frequency of use 3.78 among the 15 accounting tools examined under this section. All three accounting tools were significantly different according to the paired sample *t*-test. (For sales mix, *t*=3.955, sig=0.000; for sales volume *t*=4.155, sig=0.000 and market share, t=4.013, sig=0.000).

Standards and Variance Analysis for Marketing Costs: Four major sales/marketing department costs were examined and statistically tested: (1) advertising costs, (2) sales promotion costs, (3) direct mailing costs, and (4) sales/trips/trade shows costs.

"Sales promotion costs" and "sales trips/trade shows costs" had higher mean values in both potential importance and in the frequency of use. Statistical analysis results showed that the potential importance (*t*=2.888, sig=0.005) and the frequency of use of these costs are significantly different (*t*=2.714, sig=0.008).

Sales Volumes and Profitability's of Market Segments for Marketers: The market segments of typical full service lodging properties commonly is divided into six different areas as follow: (1) Aircrews, (2) Conference groups, (3) Group travelers, (4) Corporate travelers, (5) Leisure travelers, and (6) Other travelers.

One of the important aspects of the market segment profitability analysis is to know the sales volumes and profitability contribution of different market segments. Sales volume of a market segment can be defined as the sales proportion of a market segment of the total sales (sales volume of a segment/total sales volume). Profit contribution usually shown as the percent of profit derived from a segment (profit of a segment/sales volume of a segment). Sales volumes and profitability of market segments might be different from each other, depending on the characteristics of the lodging properties and the types of market segments the lodging properties serve. For instance, sales volume of the market segment 3 could be 30 % of the total sales volume, but the profit contribution of this segment could yield only 22 % (See Table 18). The descriptive statistical results of the sales volumes and profitability of different market segments as responded by the marketers are provided in Table 19.

Marketers were asked to rank the sales volumes and profit contribution of the market segments of their properties from number 1 to number 6. While number 1 indicates the highest volume, the number 6 indicates the lowest one. There was not fixed numbers that was assigned to each market segment. In fifty-eight lodging properties, aircrews had the lowest sales volume and in 61 properties had lowest profitability. Twenty-nine out of 86 properties, corporate travelers had the highest sales volume and in 36 properties had highest profitability volume. Group travelers show a moderate sales volume in 33 properties and moderate profitability volume in 33 properties.

Table 20 shows the sales volumes and profitability of different market segments with their mean values in ranked in order (1= highest volume and 6= lowest volume). As seen from Table 20, the market segment of corporate travelers was the number one in sales volume and in profitability. The group travelers segment was the second highest segment in sales volume and third in profitability. The conference group travelers segment was the third segment in terms of sales volume, but the profitability of this segment was the second. Hence, the profitability of this segment exceeds its sales volume. The profitability of the leisure group was smaller than its sales volume. "Other" travelers segment was ranked the fourth in sales volume and fifth in profitability. Finally, aircrews segment was the fifth in sales volume and was the lowest profitable segment among all market segments. Figure 6 represents a graphic representation of the sales volume and profitability as was explained in Table 20.

Table 18: An Example of Sales Volumes and Profitability of Different Market Segments

	Market Segments				
	Segment1	Segment 2	Segment 3	Segment 4	Total
Sales Volume	*20%*	*33%*	*30%*	*17%*	*100%*
Sales ($)	120	200	180	100	600
Cost ($)	90	160	140	70	460
Profit ($)	30	40	40	30	140
Profitability	*25%*	*20%*	*22%*	*30%*	*23%*

Table 19: Sales Volumes and Profitability Contribution of Different Market Segments as Reported by Marketers (Frequencies)

Sales Volume	Aircrews	Conference groups	Group travelers	Corporate travelers	Leisure travelers	Others
1	3	19	10	29	23	4
2	4	15	26	16	18	2
3	3	20	33	24	11	6
4	7	23	15	6	20	6
5	11	8	1	8	9	39
6	58	1	1	3	5	29
1= highest 6= lowest	**86**	**86**	**86**	**86**	**86**	**86**
Profitability	Aircrews	Conference groups	Group travelers	Corporate travelers	Leisure travelers	Others
1	2	23	8	30	23	2
2	1	23	25	18	12	0
3	1	20	32	23	14	6
4	5	16	17	9	27	7
5	16	3	3	3	9	44
6	61	1	1	3	1	27
1= highest 6= lowest	**86**	**86**	**86**	**86**	**86**	**86**

Table 20: Sales Volumes and Profitability Contribution of Different Market Segments (Ranked in order)

Market Segments[1]	Sales Volume	Profitability
Aircrews	6	6
Conference groups	3	2
Group travelers	2	3
Corporate travelers	1	1
Leisure travelers	3	4
Other travelers	5	5

Scale [1] 1=Highest 6= Lowest

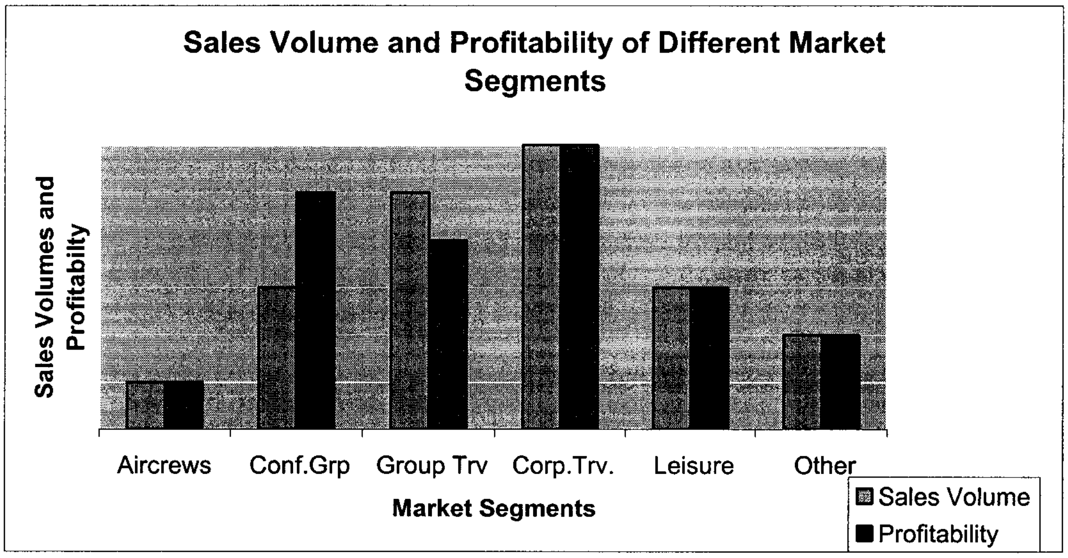


Figure 6: Sales Volume and Profitability Contribution of Different Market Segments (Graphic Representation)

4.7 Sales Volume and Profitability of Market Segments for Controllers

This section examined the sales volumes and profitability contributions of different market segments as responded by the hotel controllers. Table 21 shows the sales volumes and profitability contributions of different market segments in the frequency form. As seen from Table 21, in most properties corporate travelers (49 properties), conference groups (38 properties) and leisure travelers (38 properties) were number one in sales volumes, and in aircrews (87 properties) had the lowest sales volume. The group travelers had moderate sales volume in 44 properties (number 3) and had the second highest sales volume (number 2) in 54 properties. Others had different sales volumes. Figure 7 is the graphic representation of the same data as represented in Table 21.

Profitability contributions of the market segments had a similar pattern in some segments. In most properties, corporate travelers were number one in profitability (65 property). In thirty-nine out of 143 properties conference groups were number one in profitability. Leisure travelers were the number 1 segment in thirty-eight properties. The profit contribution of the aircrews was the lowest in 99 properties. Group travelers had moderate profitability volume in 63 properties (number 3).

Table 22 shows the sales volumes and profitability of different market segments ranked in order. In both, sales volume and profitability of the aircrews was the lowest volume (number 6). Corporate travelers were number one segment in profitability. Group travelers (number 3 in sales and number 4 in profitability) and leisure travelers (number 4 in sales and number 3 in profitability) had moderate sales volume and profitability. The travelers categorized in the 'other' group were the fifth in sales volume and profitability.

Table 21: Sales Volumes and Profitability Contribution of Different Market Segments of Controllers' Properties (Frequencies)

Sales Volume	Aircrews	Conference groups	Group travelers	Corporate travelers	Leisure travelers	Others
1	17	38	11	49	38	10
2	4	27	54	28	22	7
3	10	31	44	25	29	16
4	6	31	23	25	31	19
5	19	12	7	13	14	62
6	87	4	4	3	9	29
	143	**143**	**143**	**143**	**143**	**143**
Profitability	Aircrews	Conference groups	Group travelers	Corporate travelers	Leisure travelers	Others
1	8	39	5	65	38	4
2	2	40	33	32	21	11
3	5	28	63	24	23	12
4	8	22	31	13	48	20
5	21	10	9	5	8	73
6	99	4	1	4	5	23
1= highest	**143**	**143**	**142**	**143**	**143**	**143**

2= Lowest

Table 22: Sales Volumes and Profitability of Different Market Segments (N=143)
(Ranked in order)

Market Segments	Sales Volumes[1]	Profitability[1]
Aircrews	6	6
Conference group	2	2
Group travelers	3	4
Corporate travelers	1	1
Leisure travelers	4	3
Others	5	5

1=highest volume
6= lowest volume

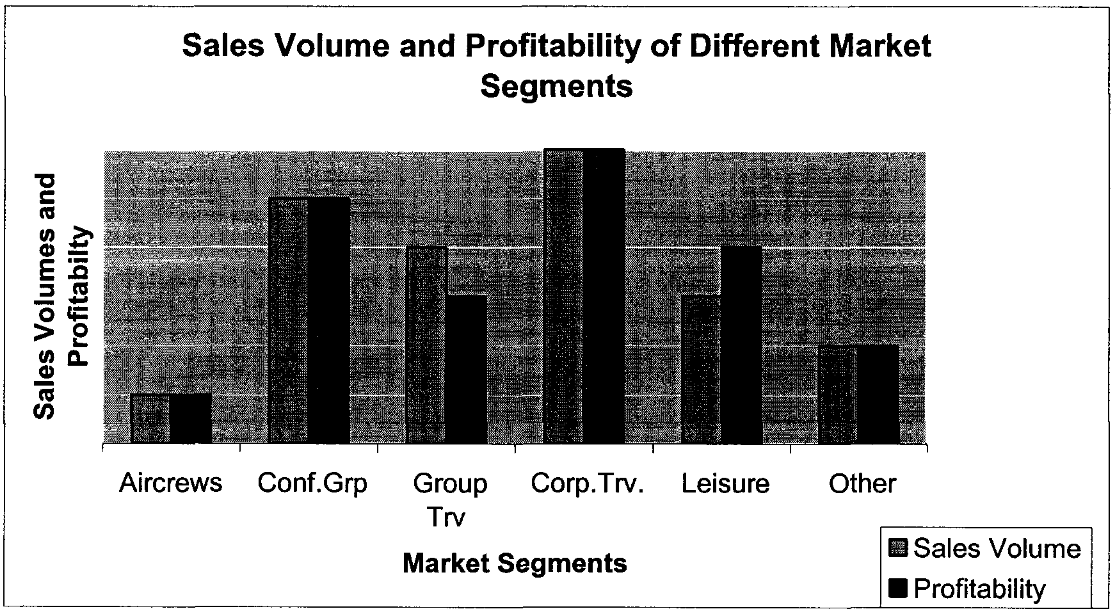


Figure 7: Sales Volume and Profitability Contribution of Different Market Segments
(Graphic Representation)

4.8 Perception Differences between Marketers and Controllers on the Market Segment Profitability

To make logical comparisons between marketers and controllers on the market segment profitability issue 14 statements were provided to marketers and controllers. The statements compared in this section sought to address the perception differences between marketers and controllers. In this section, both marketers and controllers perceptions on the market segment profitability issues were compared and statistical results were reported. Independent *t*-tests were performed to determine if there were statistically significant differences between the marketers and controllers.

This section mainly reports the statistical results of the 14 statements given in the section 3 of both questionnaires. Respondents were asked to rank their agreement on the given statements. Perceptions of the respondents were measures by a Likert-type scale, ranging from 1 (definitely disagree), to 5 (definitely agree).

Descriptive and independent *t*-tests results were summarized in Table 23 and Table 24. The mean values of the 14 statements were ranked to illustrate the level of agreement of the marketers and controllers. Table 23 shows the mean values of the perceptions of both marketers and controllers with ranked order.

In-depth analysis of the findings showed important hints for the study. For example, the mean value analysis found in Table 12 shows that the phrases with highest and lowest means are consistent with the objectives of this study. The highest mean scores of marketers are the following statements:

(1) The accounting systems for hotels are designed to identify departmental profitability, rather than market segment profitability (4.10).

(2) Accurate cost information in different market segments makes it possible to improve the profitability of your property (4.00).

(3) Market segment profitability is very important to your marketing decisions (3.95).

(4) A more reliable and accurate cost information for each market segment helps you for better pricing decisions (3.92).

The highest level of agreement on these statements justifies an important aspect of this study. First, these agreements reflect the insufficiency of the existing accounting system. Second, these agreements expose the importance of accurate and reliable information for marketing decisions, and third, disclose the need of a new accounting tool in marketing decisions.

The least agreed statements of marketers are the following statements:

(1) The method you are using for market segment profitability analysis accurately measures the full costs of services provided to customers (2.92).

(2) The existing accounting systems supplies valuable information to your marketing decisions (3.20).

(3) While some customers may be more profitable, others may be served at cost (3.33).

The lowest level of agreement on the above statements again reflects the deficiency of the existing accounting systems from the marketers point of view. Marketers agreed that the existing accounting systems do not accurately measures the profitability of market segments, do not supply valuable information for marketing decisions and some customers may be served at cost.

The perceptions of the respondents on the MSPA were divided into four main areas as follows:

1. Market segment profitability
2. Accounting systems
3. Costing systems
4. Pricing decisions

4.8.1 Market Segment Profitability

There were four statements under this category, which reflect the various statement of MSPA. The mean values ranged from 3.33 to 3.95 for marketers and from 3.29 to 3.76 for controllers. "Market segment profitability is very important to your marketing decisions" showed the highest mean in the controllers survey and "The pricing policy you are using for each market segment maximizes your net profitability" had the highest mean in the controllers' survey. "While some customers may be most profitable, others may be served at cost" displayed the lowest mean in both marketing and controllers' survey (See Table 23 for the mean values of other statements).

Table 23: Perception of Marketers and Controllers on Market Segment Profitability Analysis

Perceived Statements	Marketers Mean	R* O	Controllers Mean	R* O
1. Market segment profitability				
A. In marketing, the key point is profitability, not the amount of sales	3.52	(8)	3.64	(7)
B. Market segment profitability is very important to your marketing decisions	3.95	(3)	3.48	(10)
C. While some customers may be most profitable, others may be serve at loss	3.33	(11)	3.29	(11)
D. The pricing policy you are using for each market segment maximizes your net profitability	3.71	(7)	3.76	(6)
2. Accounting systems				
A. The existing accounting system supplies valuable information to your marketing decisions.	3.20	(12)	3.19	(13)
B. P&L statements must be re-analyzed to produce a market segment P&L statement for each market	3.43	(9)	3.23	(12)
C. Accounting systems for hotels are designed to identify departmental profitability rather than market segment profitability	4.10	(1)	4.41	(1)
D. Many accountants and marketers are not aware of the effects of their cost allocation decisions, as they only do what is common practice	3.83	(6)	3.61	(8)
3. Costing systems				
A. Firms in competitive markets need detailed, accurate, and flexible costing systems.	3.91	(5)	4.01	(2)
B. Accurate cost information in different market segments makes it possible to improve the profitability of your property	4.00	(2)	3.82	(4)
C. The method you are using for market segment profitability analysis accurately measures the full costs of services provided to customers	2.92	(13)	2.73	(14)
D. I am willing to adopt and enhance our cost system to a new cost approach for a better market segment profitability analysis	3.51	(10)	3.56	(9)
4. Pricing decisions				
A. A more reliable and accurate cost information for each market segment helps you for better pricing decisions.	3.92	(4)	3.79	(5)
B. Right price decisions can be made only if you have the right cost information about your products or services.	3.91	(5)	3.87	(3)

* Ranked in order

4.8.2 Accounting Systems

The perceptions of respondents on the existing accounting systems were divided into four statements. The means of these statements ranged from 4.10 to 3.20 for marketers and from 4.41 to 3.19 for controllers. "Accounting systems for hotels are designed to identify departmental profitability, rather than market segment profitability" was the highest mean in both surveys (4.10 and 4.41). Similarly, the mean value of the statement of "the existing accounting systems supplies valuable information to your marketing decisions" was the lowest in both surveys (3.20 and 3.19). The other two statements received moderate values for both.

4.8.3 Costing Systems

The information about "costing system" supplies very valuable information to marketers related to their marketing decisions. Perceptions of marketers and controllers on the costing systems were examined in four statements. The highest mean was 4.00 and the lowest was 2.92 within four statements. "Accurate cost information among market segments makes it possible to improve the profitability of your property" showed the highest mean in marketing survey. "The method you are using for market segment profitability analysis accurately measures the full costs of services provided to customers" was the lowest mean. The agreement of controllers on the statement of "firms in competitive markets need detailed, accurate, and flexible costing systems" was the highest (4.01) among other four statements given in this group. The lowest mean (2.73) among controller was “the method you are using for market segment profitability analysis accurately measures the full costs of services provided to customers.

4.8.4 Pricing Decisions

There were two statements under this group: “A more reliable and accurate cost information for each market segment helps you make better pricing decisions” and “ Right price decisions can be made only if you have the right cost information about your products or services.” The mean values of the two given statements related to pricing decisions were almost the same as in the marketers survey (3.92 and 3.91) and were very close to each other in the controllers survey (3.79 and 3.87).

4.8.5 Hypothesis Testing: Perception Differences Between Marketers and Controllers

In order to determine whether there is a significant difference in the perceptions of the 14 given statements on the Market Segment Profitability Analysis between marketers and controllers, the independent sample mean *t*-test was employed. Levene’s test was performed to check for the homogeneity of variance assumption. The results of Levene’s test showed that there were unequal variances in two of the fourteen statements. Therefore, the separate-variance t-test for means (the equal variances not assumed) was used for comparing means of these two statements.

The independent sample *t*-test indicated statistical differences ($p \leq 0.05$) between the perceptions of marketers and controllers on the given two statements.

(1) Market segment profitability is very important to your marketing decisions (t=3.463 and sig=0.001).

(2) Accounting systems for hotels are designed to identify departmental profitability rather than market segment profitability (t=-2.639, sig=0.009).

The positive t-value indicated that the agreement of marketers is higher that controllers' and the negative t-value show that the agreement of controllers is higher than marketers.'

The results of Table 24 show that for the most part marketers and controllers have similar perception about the statements given on the market segment profitability analysis. This study identified that there is a common agreement between marketers and controllers on the given statements. By using the independent sample mean t-tests two of the 14 statements were significant at 0.05 level. In nine statements the agreement level of marketers were higher than controllers and in six statements were lower than controllers. Positive mean differences show that the agreement levels of marketers are higher than controllers' and the negative mean differences indicate that the agreement levels of marketers are lower than controllers.'

Analyzing the mean differences is very important in order to understand the common perceptions or perception differences of two types of professionals. As noted in previous chapters, the controllers are the professionals who produce financial information in order to help management make better management decisions. Marketers are the professionals who use accounting information for better marketing decisions. Therefore, to understand the perception differences between these groups become more important. In the following nine statements, marketers have high level of agreement than controllers:

1. Accurate cost information in different market segments makes it possible to improve the profitability of your property (4.00 vs. 3.82).
2. Market segment profitability is very important to your marketing decisions (3.95 vs. 3.48).
3. A more reliable and accurate cost information for each market segment helps you for better pricing decisions (3.92 vs. 3.79).
4. Right price decisions can be made only if you have the right cost information about your products and services (3.91 vs. 3.87).
5. Many accountants and marketers are not aware of the effects of their cost allocation decisions, as they only do what is common practice (3.83 vs. 3.61).
6. P&L statements must be re-analyzed to produce a market segment P&L statement for each market segment (3.43 vs. 3.23).
7. While some customers may be most profitable, others may be serve at cost (3.33 vs. 3.29).
8. The existing accounting system supplies valuable information to your marketing decisions (3.20 vs. 3.19).
9. The method you are using for market segment profitability analysis accurately measures the full costs of services provided to customers (2.92 vs. 2.73).

Many of these statements emphasize the importance of an accounting system in terms of providing accurate and reliable information for MSPA and marketing decisions. This also shows that MSPA is more important to marketers, than controllers are.

In the following five statements, the agreement levels of marketers were lower than controllers were:

1. I am willing to adopt and enhance our cost system to a new cost approach for a better market segment profitability analysis (3.51 vs. 3.56).
2. In marketing, the key point is profitability, not the amount of sales (3.52 vs. 3.64).
3. The pricing policy you are using for each market segment maximizes your net profitability (3.71 vs. 3.76).
4. Firms in competitive markets need detailed, accurate and flexible costing systems (3.91 vs. 4.01).
5. Accounting systems for hotels are designed to identify departmental profitability rather than market segment profitability (4.10 vs. 4.41).

Some of the statements above are the reflection of accounting issues rather than marketing issues. For example, enhancing the existing cost system to a new cost system is in the interest area of controllers rather than marketers. As such, "firms in competitive markets need detailed, accurate and flexible costing systems" reflects the accounting point of view rather than marketing point of view. This may be the reason why the level of agreement of marketers on these statements is lower than controllers are.

One of the above statements is worth noticing in terms of understanding the professional approaches of marketers and controllers to sales and profitability: "in marketing, the key point is profitability, not the amount of sales." The different agreement level on this statement supports the general view of marketing approach that marketing has traditionally focused on revenues and controllers has traditionally focused on profitability, which reflects the nature of two different professions (The interpretations of other statements were made in the first part of this section).

Table 24: The Perception Differences on the Market Segment Profitability Analysis

Statement of perceptions	Marketers Mean	Marketers SD	Controllers Mean	Controllers SD	Mean Diff	t	Sig
1. Marketing segment profitability							
A. In marketing, the key point is profitability, not the amount of sales	3.52	1.114	3.64	1.165	-0.12	-0.768	0.443
B. Market segment profitability is very important to your marketing decisions	3.95	0.880	3.48	1.061	0.47	3.463	0.001*
C. While some customers may be most profitable, others may be serve at cost	3.33	1.132	3.29	1.192	0.03	2.00	0.842
D. The pricing policy you are using for each market segment maximizes your net profitability	3.71	0.906	3.76	0.936	-0.05	-0.364	0.716
2. Accounting systems							
A. The existing accounting system supplies valuable information to your marketing decisions	3.20	1.061	3.19	1.061	0.01	0.061	0.951
B. P&L statements must be re-analyzed to produce a market segment P&L statement for each market	3.43	1.164	3.23	1.208	0.20	1.226	0.221
C. Accounting systems for hotels are designed to identify departmental profitability rather than market segment profitability	4.10	0.868	4.41	0.816	-0.30	-2.639	0.009*
D. Many accountants and marketers are not aware of the effects of their cost allocation decisions, as they only do what is common practice	3.83	0.972	3.61	1.014	0.22	1.594	0.112
3. Costing systems							
A. Firms in competitive markets need detailed, accurate, and flexible costing systems.	3.91	0.903	4.01	0.826	-0.10	-.856	0.393
B. Accurate cost information in different market segments makes it possible to improve the profitability of your property	4.00	0.854	3.82	0.885	0.18	1.525	0.129
C. The method you are using for market segment profitability analysis accurately measures the full costs of services provided to customers	2.92	1.087	2.73	1.041	0.18	1.276	0.203
D. I am willing to adopt and enhance our cost system to a new cost approach for a better market segment profitability analysis	3.51	0.942	3.56	0.861	-0.05	-.393	0.695
4. Pricing decisions							
A. A more reliable and accurate cost information for each market segment helps you for better pricing decisions.*	3.92	0.857	3.79	0.812	0.13	1.135	0.258
B. Right price decisions can be made only if you have the right cost information about your products or services.*	3.91	0.903	3.87	0.903	0.04	0.321	0.748

* Equal variances not assumed

4.8.6 Summary of Chapter 4

This chapter reports the results of survey and data analysis. The demographic profiles of the marketers and controllers and the characteristics of the two parties' were reported. Descriptive statistical data were provided about the using market segment profitability analysis. Paired sample *t*-tests were used to identify the difference between the potential and existing value of the accounting information from the existing accounting system. Then, sales volumes and profitability contributions were used to reveal the contribution of sales volumes and profitability towards different market segments. Next, independent sample *t*-tests were used to compare the marketers and controllers perceptions on the market segment profitability issues.

CHAPTER V

SUMMARY, FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Summary

This final chapter focuses on the summary, major findings, conclusions, implications, recommendations and suggestions for future research. Specific emphasis will be placed on the practical and theoretical implications.

This study was the first empirical research of its kind investigating the value of the accounting information used in marketing decisions in the lodging industry derived from the existing accounting system. The main purpose of this study was to assess the existing accounting systems in terms of providing valuable information to analyze the market segment profitability of the lodging properties. Under this consideration the objectives of this study were to:

1. Find the level of agreement between marketers and controllers concerning the full cost allocation among different market segments.
2. Compare the potential and existing value of the accounting information as perceived by the marketers used in marketing decisions.
3. Find the importance and frequency of use of specific accounting tools in marketing decision-making related to market segment profitability analysis.

4. Find the importance and frequency of use of specific accounting tools in marketing decision-making related to market segment profitability analysis.
5. Compare hotel marketers' and hotel controllers' perceptions on market segment profitability issues.

Within this framework, the perception of hotel marketers' and hotel controllers' related to market segment profitability analysis was assessed and differences were reported. To accomplish the above objectives the research questions of this study were stated as:

1. What is the level of agreement of marketers and controllers on the cost allocation among market segments?
2. What is the current use of percentage of any method to measure the profitability of each market segment of the lodging properties?
3. What are the reasons for not using market segment profitability analysis?
4. How do marketers value the accounting information that is provided by the current accounting systems for marketing decisions?
5. What are the most and least profitable market segments in the industry?
6. What is the importance and frequency of use of specific accounting tools in marketing decisions related to market segment profitability?
7. What are the perceptions of marketers and controllers on the specific statements related to the market segment profitability and the structure of current accounting systems?

As mentioned in the Chapter 3 this study was a cross-sectional study and was conducted with two different hospitality professionals: hotel marketers and hotel controllers. The sample size of marketers was the 957 members of the Hospitality Sales and Marketing Managers Association and the target population of controllers survey was the 853 members of Hospitality Financial and Technology Professionals.

The data for this study were collected in two phases. Two questionnaires were developed based on the literature review and focus group interview with hotel financial controllers and marketing managers. The questionnaires consisted of common and different questions seeking to provide suitable data to fulfill the objectives of this study. Both questionnaires had five sections of which three of the sections were alike and two of the sections were different. The main sections of the marketers' questionnaire were as the following:

Section 1: The usage of segment profitability analysis,

Section 2: The value of the accounting information in marketing decisions,

Section 3: Perceptions of marketers about market segment profitability analysis,

Section 4: Information about the property, and

Section 5: Information about the respondents.

The controllers' questionnaire had similar sections except that section two of the marketers' questionnaire was not included. The major impetus for this study was the recognition of the importance of market segment profitability analysis research in the lodging industry and the need to understand the importance of the accounting information in terms of analyzing different market segments profitability. Linking the concepts of MSPA knowledge and existing accounting information provides a basis for:

- Understanding the deficiencies of the current accounting systems in order to make better marketing decisions.
- Understanding the ability of the current accounting system for providing useful accounting information for marketing decisions.
- Understanding the perception of marketers and controllers on the specific accounting statements related to market segment profitability.

This research supported the answer to the research questions of whether the existing accounting systems provide useful information for marketing decisions in the three main areas for:

(1) Marketing/business decisions

(2) Cost-related decisions for market segments

(3) Decisions related to the allocation of total marketing budgets among different market segments

5.2 Major Findings

The major findings of this study can be summarized under five categories as follows:

5.2.1 The Agreement on the Cost Allocation among Market Segments

Marketers and controllers had different opinions about cost allocation among market segments. While 45.4 % of the marketers agreed that all company costs should be allocated among market segments, only 13.3 % of the controllers shared this view with marketers. The conservative responses from controllers are partly attributed to the fact that controllers traditionally have used operated departments rather than market segments as an allocation base. Current usages of any method for market segment profitability differ in the marketers' and in controllers' properties. While 67.4% of the marketers use a method to measure the segment profitability, only 24.5% of the controllers use such a method. The reasons for not using market segment profitability analysis methods differ between marketers and controllers. According to 50% of the marketers, the primary reason for not using MSPA was "Not requested by operator/management." The answer of the controllers to the same question is different. According to 23.6% of the controllers, "Not a common practice of USALI" was the first reason. Approximately 21.4% controllers pointed out that "Not requested by operator/management" was the second reason. "Not implemented by the corporate office" was the third reason among controllers and received 17.5% response rate.

5.2.2 The Value of the Accounting Information for Marketing Decisions

This study showed that the information provided by the current accounting systems was undervalued by the marketers. There is a gap between the information of what the current accounting system provides and what the marketers expect. The information gap varies depending on the type of accounting information. Respondents were most dissatisfied with their existing accounting information in the four areas:

(1) Decisions related to how to allocate the total marketing budget among market segments,

(2) New service development decisions,

(3) Pricing decisions, and

(4) Customer mix decisions

These high differences were perceived as the areas where improvements in the current accounting information would be highly valued by marketers. Sales promotion costs, advertising costs, product/service mix decisions, sales-force management costs, and public relation costs were ranked relatively low in their perceived information gap. This means that marketers had high level of satisfaction for these data provided from the existing accounting systems.

5.2.3 The Importance and Frequency of use of the Accounting Information

This study showed that marketing managers put high importance on the tools providing revenue information. Cost related items received least attention from the marketers. This supports the general view of marketing approach that marketing has traditionally focused on revenues and attraction of customers. Descriptive statistical results showed that there was a considerable difference between the potential importance and the frequency of use of the accounting information. "Flexible budget," "market share," "sales mix" and "fixed vs. variable costs" had the highest gap between potential and existing importance. Hotel marketers disclosed that the above four accounting information was not frequently used as expected for an effective marketing decision-making. Inferential statistics analyses (paired sample *t*-test) also documented that the differences between the potential importance and the frequency of use are statistically different for the 15 accounting tools that were tested.

5.2.4 Sales Volumes and Profitability of Different Market Segments

Sales volumes and profitability contributions of different market segments are important to marketers in terms of market segment valuation, pricing decisions and determining marketing strategies of a lodging property. Both surveys with marketers and controllers showed that there are significant differences between the sales volumes and profitability contributions of different market segments. For example, aircrews segment travelers had the lowest volume and lowest profit contribution in marketers' and controllers' properties. In contrast to aircrews, corporate travelers had the highest sales volume and profitability contribution in both surveys. Marketers indicated that the profitability of conference groups is higher to comparing its sales volumes. According to controllers, the sales volume and profitability level of conference groups are equal. Group travelers were seen equal to marketers and controllers in terms of sales volume and profitability. Controllers stated that the profitability of leisure group is higher than its sales volume. The same group was seen equal by marketers. The different level of assessments on sales volume and profitability contribution proved that highest sales volumes do not always result in highest profitability.

5.2.5 Perception Differences on Marketers and Controllers on the MSPA issues

The results of this study showed that marketers and controllers had common agreement in 12 out of 14 statements related to market segment profitability issues. Both marketers and controllers showed the highest agreement on the following three statements:

- The accounting systems for hotels are designed to identify departmental profitability, rather than market segment profitability.
- Accurate cost information in different market segments makes it possible to improve the profitability of your property.
- Firms in competitive markets need detailed, accurate and flexible costing systems.

These three statements are important outputs of this study that reflect the deficiencies of the current accounting systems and the need of a reliable and accurate cost information to improve the profitability of the lodging properties. This view is shared not only by marketers who use accounting information but also shared by controllers who are responsible to provide accurate and reliable information to marketers for better management decisions.

Beside the highest common agreement between marketers and controllers, similarly they were least in agreement on the following statements:

- The method you are using for market segment profitability analysis accurately measures the full costs of services provided to customers
- The existing accounting systems supply valuable information to your marketing decisions

These lowest level of agreements support the argument of the problem statement that the existing accounting systems do not accurately measure the full costs of services provided to customers. Therefore, the existing accounting systems do not supply valuable information to marketers that enable them to increase the quality of marketing decisions and the profitability of the lodging properties.

5.3 Discussion of the Findings

One of the important issues facing behavioral accounting researchers is the manner in which accounting information influences marketing decision-making (Foster & Gupta, 1994) and how this accounting information is valued by the marketers. In this survey, it was found that marketers ranked some specific accounting information as the most important potential source for their decisions. However, some marketers evaluated their existing accounting systems as inadequate for the marketing decisions related to MSPA. These findings indicate that the current accounting systems should be improved in order to satisfy the needs of the marketing decision-makers.

Despite the importance of having accurate accounting information from the existing accounting systems, the current systems are incapable of providing accurate information in many areas of marketing decisions. Current accounting systems that use the USALI principles measure the performance of hotel departments but do not adequately support marketing decisions. Foster and Gupta (1994) reported that price setters regularly criticized their accounting systems because of unreliable accounting information due to inappropriate cost information based on poor cost allocation bases. Foster and Gupta's (1994) survey also showed that marketers preferred full costing to variable costing when setting prices. However, marketers have difficulty in obtaining accurate and reliable accounting information from their accounting system.

The main task of a lodging marketing manager is to determine the needs of particular market segments, develop lodging business that provides for those needs, inform potential customers about the services, and sell those services at a price that produces a profit for the business. It is the marketers who decide whether a particular customer segment brings more sales volumes or profitability to the company, and whether the sales offering will be successful in the marketplace.

Marketers use a wide range of financial and non-financial information from internal and external sources and use this information when making decisions. The hotel accounting systems are the main source of financial information for marketing decisions as well as other managerial decisions. Customer characteristics, average length of stay, average daily room rate, average spending dollar per person, food and beverage costs are some financial and non-financial information that help marketers in the decision making process. Based on the financial and non-financial information, predictions are made about product/service costs, customers' ability to spend and other inputs that will affect customer profitability. Other behavioral predictions are made in identifying the actions or dynamics that have the potential to change customers' value to the organization. New product developments, offering new services, and pricing strategies can positively or negatively impact the customers' value.

Furthermore, marketers use more sophisticated financial techniques in the decision making process to increase the sales volume or profitability of the lodging properties, such as cost-volume profit (CVP) analysis, yield management (YM), and rooms value engineering. For example, CVP analysis can be used to evaluate alternative courses of actions in terms of generating profit for a period of time, a single department, a promotional package or for the operation as a whole. In yield management the goal is to maximize the revenue if space is available. This technique is useful for revenue maximization but ignores the profits generating from the customers. Yield management may be successful in the short term for adjusting the prices to marketing conditions, but pricing decisions must be based on a more thorough analysis that includes revenues, costs and profit margins. Room value engineering is a technique that considers the cost elements of selling rooms: the cost of serving and the cost of materials (Lockwood and Jones, 1990). Each of these techniques has some benefits and shortcomings depending on the type of lodging property and the situations used.

To make better decisions and to appeal to new customers, marketers need accurate and reliable financial information provided by the accounting system. The lodging marketplace is increasingly competitive. Dynamic marketing conditions force companies to be more spirited to survive in the market place. Thus, marketers need to analyze the revenues and the cost of services provided to those market segments. Thus, the current accounting systems need to be improved or restated in terms of providing more valuable or useful information to support marketing/business decisions.

5.4 Conclusions

The accounting system used for lodging properties is limited in its effort to provide accurate and useful information in many areas of hotel operations, including marketing decisions. It is obvious that the first limitation is the traditional accounting system, which is built up based on USALI principles. The second limitation of the hotel accounting systems is the transaction design of product and services information at the departmental and service level. Some specific characteristics of these limitations are given by Richebacher (2003):

(1) Product/service costs are aggregated in accounts completely separate from customers, cost of goods sold for inventory costing, while room revenues are collected by market segments, but other revenues by departments. For customer profitability analysis both are needed at the customer level

(2) Like products, costs, sales/marketing service costs are also collected in accounts separated from customers. This makes it impossible to calculate customer acquisition and service costs, two essential ingredient customer profitability analyses.

(3) Current accounting systems exist in isolation from each other due to fragmented operation units. This makes it difficult to create a single company-wide customer identification method exists.

The achievement of an organization's objectives largely depends on the efficient management of its market, which can be segmented into several market segments. Successful management of these segments can be achieved through effective marketing strategies. Developing the appropriate marketing strategies depends on how the company analyzes the financial information. This study indicated that the marketing managers and controllers agreed that the current accounting information does not supply accurate information for marketing managers that they need for better marketing strategies.

Profit is the ultimate goal of all business organizations and profit measurement is the ultimate goal of accounting professionals. Accounting systems offer many ways to measure the profitability of the products and services. Today, many organizations measure not only the profitability of products and services but also customer profitability.

Lodging marketing managers make decisions about room pricing, catering, banqueting, room spacing, seasonal pricing, advertising, public relations and many other decisions. Many of these pricing issues generally are affected by two factors: Dynamic marketing conditions and accounting information. In general, the better the information is the better the decisions are. The main source of the accounting information is the existing accounting system of the lodging property. Unfortunately, the existing lodging accounting systems are not able to supply accurate and reliable information to the marketers for the marketing decisions. This includes customer costs, customer profitability, market segment profitability, and allocating marketing costs among different market segments. Thus, marketing decision makers may be mislead about the costs, determining their price strategies based on the misleading costs, develop inappropriate price and profitability strategies.

In the implementation of MSPA in the lodging industry, the existing accounting application of USALI principles makes it difficult to determine the actual costs of services provided to specific customers or market segments. Improving the cost analysis will often require changes in the management accounting principles (Innes & Mitchell, 1997). Traditionally, management accounting in the lodging industry has been oriented towards departmental profitability. Financial performance of the departments is an important issue. However, MSPA requires analysis of customer profitability, which requires cost estimates of the activities across the traditional departmental boundaries.

The investigation of MSPA in the lodging industry establishes groundwork for the need of a full cost allocation to all market segments. The current accounting system and the current usage of market segments yield some valuable insights. Although marketers use different type of methods to measure the profitability of the market segments, it is obvious that they need a true yardstick to make better decisions. Instead of using traditional cost allocation methods (volume-based methods), implementation of Activity Based Costing (ABC) will enable marketers to understand the cost of the activities to perform marketing operation. Thus, they will easily recognize the value added activities towards more profitable segments and eliminate non-value added activities.

The results of this study suggest that it is rational for hotel properties to allocate their costs to market segments to develop a clear picture which help to improve the profitability of the overall operation. Needless to say, there is a need for further studies in the accounting systems that all costs should be allocated among market segments by using ABC techniques and by employing MSPA model. ABC allows companies to see the real costs of their activities, such as marketing costs and cost-to-serve information of market segments. The MSPA should be developed based on ABC, which both supply valuable information of marketing costs and the cost-to-serve of each market segment.

5.5 Practical Implications

The results of this study are useful for both practitioners and researchers and have important accounting and marketing implications. Realizing the limitations of the current accounting systems and recognizing the potential competitive advantages of accurate cost information, hoteliers need to adopt new accounting techniques to gain competitive advantage. Researchers and practitioners suggest using MSPA which uses ABC costing methods as a new accounting technique that provides accurate and reliable accounting information for marketing decisions and the cost-to-serve information of different market segments.

From the controllers' point of view, this study showed that the current accounting systems do not provide valuable information to marketers that can be used analyzing the marketing activities and cost structure of market segments. One of the important tasks of controllers is to provide useful accounting information to decision makers. In essence, it enables the organization to cope with uncertainty and in turn this gives functional control over financial information and company sources. Therefore, controllers need to re-analyze the current accounting data to produce useful information that can be utilized by the marketing managers.

This study also revealed that both the marketers and controllers agree that the current accounting systems are based on departmental performance evaluation and do not provide accurate information to analyze the profitability of different market segments. Marketers need detailed and accurate information about the costs of services provided to customers. If marketers would have better cost information for each market segment, they could make better decisions by focusing on more profitable market segments.

This study clearly confirms that the existing accounting systems do not provide sufficient accounting information to improve the quality of decision making in the lodging industry. From a managerial perspective, the findings of this study suggest implications for marketing practice. Prior research publications have demonstrated the importance of the MSPA in lodging industry. This research provided a valuable feedback to the industry for more practical future application. If marketing managers want to improve the profitability of market segments and thus the profitability of the lodging properties they need accurate and detailed sales, cost and profit information for each market segment.

Cost and performance measurement of different market segments improve the profitability of the lodging companies, through increasing the quality of management decisions. ABC is one of the most useful costing methods because it does not allocate overhead costs on the basis of a single factor. It attempts to measure the cost of using resources to perform activities required by different outputs. Unnecessary activities will be eliminated and value added activities will be added or improved. ABC can help hotel managers to better evaluate their operating departments and market segment profit analysis. ABC should be integrated with the USALI and adjusted to the business specifics of the hotel industry.

5.6 Theoretical Implications

The purposes of this study was to provide a comprehensive evaluation of existing, accounting, marketing and hospitality literature and to provide a platform for future discussion aimed at the lack of current accounting system in terms of providing useful information for marketing decisions related to analyzing the profitability of different market segments.

This study will have important implications for other researchers. Researchers will try to understand the underlying reasons why controllers should remain committed to the USALI principles, if USALI does not provide information to the dynamic marketing environment of the hotel operations. Future researchers should try to understand the real barriers for not applying the MSPA in the lodging industry. Although some forms of models were developed for the lodging industry (Nordling & Wheller, 1990; Dunn & Brooks, 1992) more comprehensive models are needed to apply to the industry. If researchers understand the technical and psychological barriers, they can easily create the solution to overcome this situation.

The literature review indicated that the existence of much descriptive and inductive research on MSPA is crucial for advancing a body of knowledge that provides support for a link between accounting information and MSPA.

5.7 Recommendations

Based on the findings derived from this study the following recommendations can be offered to marketers, controllers, and hoteliers.

- Controllers need to develop new accounting tools that assist marketing managers in the decision making process in the marketing.
- In order to reduce the risk of marketing decisions about the prices and costs of services marketing managers should be supported with accurate information.
- The current accounting system provides departmental revenue and cost information, but marketers need detailed cost information for the services provided to different market segment customers.
- If companies want to stay competitive in the new market, they need to adopt new accounting tools, which can monitor and measure the dynamic marketing environment.
- Current accounting practices supply financial information to evaluate the performance of the hotel departments, but the main sources of the revenue is hotel customers. Therefore, a new accounting approach is needed to measure the performance of the hotel customers and put the hotel customers in the center of the hotel operation.

- Hoteliers can develop new marketing strategies if they know which markets are more value-added and which are least value-added to the company's bottomline profitability.
- Hotel investors could make better investment decisions, if they already knew what are the most and least profitable segments of the lodging properties in a specific industry segment.
- Hoteliers can add, alter, and drop new products and services to attract more profitable market segments.
- Marketing mangers can clearly manage their marketing activities, if they knew which markets should they focus to improve the profitability of the company.

CPA techniques had been successfully embraced by financial services industry firms and retailing industry. There is little evidence that the lodging companies applied the CPA techniques before.

5.8 Suggestions for Future Research

The following suggestions based on the literature review and the empirical results achieved in this study are put forward:

- A comprehensive study among full-service properties using additional measurement methods (including an in depth interview or a focus group interview) is suggested to conduct to understand more insights of the current usage of market segment profitability issues.

- More specific measurement methods need to be developed to measure the performance of market segments (e.g., occupancy rate, average daily rate for each market segment, sales volumes of market segments, average length of stay).
- Further research is needed to provide empirical evidence to determine whether the current MSPA models are applicable to and sufficient to successful marketing operations.
- Empirical research on the use and applicability of the Activity-Based Costing concept should concentrate on different types of full-service lodging properties (e.g., luxury, upscale, convention and casino hotels) that serve different market segments.
- Current literature should be broadened through empirical research to find out the technical and psychological barriers for not using MSPA in the lodging industry.
- A further research of this study may also include the subject of lodging general managers who are in charge of financial performance of the entire hotel operation.

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APPENDIX A: QUESTIONNAIRE - ACCOUNTING

COST ALLOCATION AND MARKET SEGMENT PROFITABILITY ANALYSIS IN THE LODGING INDUSTRY

ACCOUNTING

SECTION 1 – INFORMATION ON COST ALLOCATION

1. Which authority has more influence on your accounting policy and applications?

1. Independent owner
2. Management Company
3. Corporate headquarter
4. Property controller
5. Property general manager
6. Other (Please specify)

2. All company costs –both direct and indirect-should be allocated among revenue-generating departments.

1. Definitely disagree 2. Disagree 3. Neutral 4. Agree 5. Definitely agree

3. Are you allocating your indirect costs to revenue-generating departments?

1. Yes (If yes, please answer question 5-7) 2. If no (If no, please skip 4)

4. What are the reasons for not allocating indirect costs? (Please mark all that apply)

1. Not a common practice of Uniform System (USALI)
2. Not requested by operator/management company
3. Not implemented by corporate office
4. No sufficient knowledge/experience
5. Few applications in industry
6. Not useful for our property
7. Other (Please specify)

5. Which method are you currently using for indirect cost allocation?

1. Direct method
2. Step method
3. Formula method
4. Reciprocal method
5. Other (Please specify)

6. Please rank the importance of indirect cost allocation for the following decisions.

1= Not important 2= somewhat important 3 = Neutral 4= Important 5 = Extremely important

1. Product/service costing	1	2	3	4	5	2. Expansion or cutbacks	1	2	3	4	5
3. Product/service pricing	1	2	3	4	5	4. Staffing	1	2	3	4	5
5. Divisional performance evaluation	1	2	3	4	5	6. Other	1	2	3	4	5

7. What is your allocation base used for each indirect cost? (Please circle the appropriate number next to each indirect cost)

ALLOCATION BASES

1 = Square foot
2 = Total direct cost percentage
3 = Labor cost percentage
4 = Number of employees
5 = Sales volume percentage
6 = Profitability percentage
7 = Other
8 = Not allocated

INDIRECT COSTS

1. Administrative & General	1	2	3	4	5	6	7	8	8. Property maintenance costs	1	2	3	4	5	6	7	8
2. Sales &Marketing costs	1	2	3	4	5	6	7	8	9. Depreciation on real estate	1	2	3	4	5	6	7	8
3. Insurance costs	1	2	3	4	5	6	7	8	10. Depreciation on equipment	1	2	3	4	5	6	7	8
4. Energy costs	1	2	3	4	5	6	7	8	11. Property taxes	1	2	3	4	5	6	7	8
5. Interest costs	1	2	3	4	5	6	7	8	12. Information systems costs	1	2	3	4	5	6	7	8
6. Mngt/Franchise fee	1	2	3	4	5	6	7	8	13. Other	1	2	3	4	5	6	7	8
7. Property Rent	1	2	3	4	5	6	7	8									

8. *Are you currently using Activity Based Costing (ABC) for cost allocation?*

1. Yes (If yes, please skip question 9) 2. No

9. What are the reasons of not using Activity Based Costing? (Please mark all that apply)

1. Not a common practice of Uniform System (USALI)
2. Not requested by operator/management company
3. Not implemented by corporate office
4. No sufficient knowledge/experience
5. Few applications in industry
6. Not useful for our property
7. Other (Please specify)

10. Please mark your costing method practices for each cost object below.

.	1	2	3
Cost Objects	Cost of good	Cost of good + Direct Costs	Cost of good + Direct + Indirect Costs
1 - Room			
2 - Food			
3 - Beverage			
4 - Telecommunication			
5 - Valet Services			
6 - Other			

SECTION 2. THE USAGE OF SEGMENT PROFITABILITY ANALYSIS

11. Do you agree that all company costs –both direct and indirect-should be allocated among market segments?

1. Definitely disagree 2. Disagree 3. Neutral 4. Agree 5. Definitely agree

12. Are you currently using any method to measure the profitability of each market segments of your hotel?

1. Yes (If yes, please skip 13) 2. No

13. What are the reasons of not using market segment profitability analysis?

1. Not a common practice of Uniform System (USALI)
2. Not requested by operator/management company
3. Not implemented by corporate office
4. No sufficient knowledge/experience
5. Few applications in industry
6. Not useful for our property
7. Other (Please specify)

14. Is your hotel using any of these methods to evaluate your market segments profitability?

1. Sales alone method – Segment's *revenue* only.
2. Sales minus direct cost method – Segment's revenue less *direct costs* of that revenue
3. Sales minus direct and indirect costs – Segment's revenue less *direct and indirect costs* of that revenue
4. Budgeted lifetime sales minus direct and indirect costs.
5. Other (Please specify)

SECTION 3
PERCEPTION OF CONTROLLERS ON MARKET SEGMENT PROFITABILITY ANALYSIS

15. Please circle the degree of your agreement for the following statements

1= Definitely disagree 2= Disagree 3= Neutral 4= Agree 5 = Definitely agree

Market Segment Profitability					
1. In marketing, the key point is profitability, not the amount of sales................................	1	2	3	4	5
2. Market segment profitability is very important to your marketing decisions.....................	1	2	3	4	5
3. Market segment are the ultimate profit center, not the operating departments of a hotel	1	2	3	4	5
4. While some customers may be most profitable to your hotel, others may be served at a loss ...	1	2	3	4	5
5. The pricing policy you are using for each market segment maximizes your net profitability....	1	2	3	4	5
Accounting Systems					
6. The existing accounting system supplies valuable information to your marketing decisions....	1	2	3	4	5
7. P&L statements must be re-analyzed to produce a market segment P&L statement for each market......	1	2	3	4	5
8. Accounting systems for hotels are designed to identify departmental profitability rather than than market segment profitability...	1	2	3	4	5
9. Many accountants and marketers are not aware of the effects of their cost allocation, decision as they only do what is common practice...	1	2	3	4	5
Costing Systems					
10. Firms in competitive markets need a detailed, accurate, and flexible costing system............	1	2	3	4	5
11. Accurate cost information in different market segments makes it possible to improve the profitability of your property..	1	2	3	4	5
12. Companies with insufficient cost accounting systems have no way to determine product/ service or market segment profitability..	1	2	3	4	5
13. The method you are using for market segment profitability analysis accurately measures the full costs of services provided to customers..................	1	2	3	4	5
14. I am willing to adopt and enhance our cost system to a new cost approach for a better market segment profitability analysis...	1	2	3	4	5
Pricing Decisions					
15. A more reliable and accurate cost information for each market segment helps you for better pricing decisions..	1	2	3	4	5
16. Right pricing decisions can be made only if you have the right cost information about your products or services...	1	2	3	4	5

Sales and Profitability of Different Market Segments

Question 31.

Based on your best knowledge, please rank your market segments' sales volumes, for the following market segments:

1 = Highest volume...**6** = Lowest volume

*Please use similar ranking for other **sales volumes** accordingly.*

1. Aircrews 2. Conference groups 3. Group travelers 4. Corporate travelers. 5. Leisure 6. Others

Based on your best knowledge, please rank your market segments' sales profitability, for the following market segments:

1= Highest volume...**6** = Lowest volume

*Please use similar ranking for other **sales profitability's** accordingly.*

7. Aircrews 8. Conference groups 9. Group travelers 10.Corporate travelers. 11. Leisure 12. Others

SECTION 4 - INFORMATION ABOUT YOUR PROPERTY

32. Ownership/management type of your property?

1. Chain owned /operated hotel
2. Franchise/management contract
3. Franchise/independent management
4. Independent owned
5. Other (Please specify)

33. The segment of your property?

1. All Suite 2. Luxury 3. Upscale 4. Mid-price 5. Economy/ Budget
6. Casino Hotel 7. Other

34. The location of your property?

1. Downtown 2. Resort 3. Airport 4. Highway 5. Other

35. The number of employees of your property?

1. Less than 100 2. 100-199 3. 200-299 4. 300-399 5. Over 400

36. The number rooms of your property?

1. Under 100 rooms 2. 101-200 3. 201-300 4. 301-500 5. Over 500

37. Please mark the departments in your hotel? (Please check all that apply)

1. Rooms 2. F & B full service 3. F&B limited service 4. Beverage
5. Telecommunication 6. Casino 7. Parking 8. Guest Laundry
9. Fitness Center 10. Recreation 11. Admin& General 12. Human Resources
13. Sales & Marketing 14. Repair and Maint. 15. Other

SECTION 5 - INFORMATION ABOUT YOURSELF

1. Controller/Financial Controller 2. Assistant Controller 3. Director of Finance
4. Assistant Director of Finance 5. Dir.of Finance & Accounting 6. Accounting Manager
7. Other

39. Your gender:

1. Female 2. Male

40. Your education:

1. High School 2. Associate degree 3. Bachelor degree 4. Other

41. Your professional experiences in industry:

1. (0-2) years 2. (3-5) years 3. (6-10) years 4. (11-16) years 5. Over 16 years

<u>We appreciate you spending your valuable time to participate in this research effort.!!</u>

APPENDIX B: QUESTIONNAIRE - MARKETING

COST ALLOCATION AND MARKET SEGMENT PROFITABILITY ANALYSIS IN THE LODGING INDUSTRY

MARKETING

SECTION 1. THE USAGE OF SEGMENT PROFITABILITY ANALYSIS

Q.1. Do you agree that all company costs –both direct and indirect-should be allocated among market segments?

1. Definitely disagree
2. Disagree
3. Neutral
4. Agree
5. Definitely agree

Q.1.Are you currently using any method to measure the profitability of each market segment of your hotel?

1. Yes (If yes, skip 3)
2. No

Q.3.What are the reasons for not using market segment profitability analysis?

1. Not a common practice of Uniform System (USALI)
2. Not requested by operator/management company
3. Not implemented by corporate office
4. No sufficient knowledge/experience
5. Few applications in industry
6. Not useful for our property
7. Other (Please specify)

Q.4.Is your hotel using any of these methods to evaluate your market segments profitability?

1. <u>Sales alone method</u> – Segment's revenue only.
2. <u>Sales minus direct cost method</u> – Segment's revenue less direct cost of that revenue
3. <u>Sales minus direct and indirect costs</u> – Segment's revenue less direct and indirect costs of that revenue
4. <u>Budgeted lifetime sales minus direct and indirect costs</u>
5. Other (Please specify)

SECTION 2 - THE VALUE OF ACCOUNTING INFORMATION IN MARKETING DECISIONS

Potential and Existing Value of the Accounting Information

Scale: 1 = (LV) Least valuable 3 = (M) Moderately valuable 5 = (MV) Most valuable	Indicate how valuable accounting information **potentially** is to your decisions. **-A-** LV..........M..........MV					Indicate how valuable informtion from your **existing** accounting system is to your decisions. **-B-** LV........ M....... MV				
Q.5. Marketing/business decisions										
5. 1 Pricing decisions	1	2	3	4	5	1	2	3	4	5
5. 2 Customer mix decisions	1	2	3	4	5	1	2	3	4	5
5. 3 Product/service mix decisions	1	2	3	4	5	1	2	3	4	5
5. 4 New service development decisions	1	2	3	4	5	1	2	3	4	5
Q.5. Cost related decisions for different market segments										
5. 5 Advertising costs	1	2	3	4	5	1	2	3	4	5
5. 6 Sales promotions costs	1	2	3	4	5	1	2	3	4	5
5. 7 Sales force management costs	1	2	3	4	5	1	2	3	4	5
5. 8 Public relations costs	1	2	3	4	5	1	2	3	4	5
5. 9 Decisions related to how to allocate the total marketing budget among different market segments	1	2	3	4	5	1	2	3	4	5

Importance and Frequency of Use of the Accounting Information

1 = (LI) Least important 3 = (M) Moderately important 5 = (MI) Most important 1 = (LF) Least frequently 3 = (M) Moderately frequent 5 = (MF) Most frequently	Indicate how **important** each of these accounting tools **potentially** is to your decisions **-A-** LI..........M.........MI					Indicate how **frequently** you currently use these accounting tools from your **existing** accounting systems **-B-** LF.........M.........MF				
Cost breakdown, CVP analysis and budgeting										
8. 1 Fixed vs. variable cost breakdowns	1	2	3	4	5	1	2	3	4	5
8. 2 Cost volume profit analysis	1	2	3	4	5	1	2	3	4	5
8. 3 Fixed budgets	1	2	3	4	5	1	2	3	4	5
8. 4 Flexible budgets	1	2	3	4	5	1	2	3	4	5
Product/service profitability analysis										
8. 5 With only **direct costs** allocated to products/services	1	2	3	4	5	1	2	3	4	5
8. 6 With **full costs** allocated to products/services	1	2	3	4	5	1	2	3	4	5
Customer profitability analysis										
8. 7 With only **direct costs** allocated to products/services	1	2	3	4	5	1	2	3	4	5
8. 8 With **full costs** allocated to products/services	1	2	3	4	5	1	2	3	4	5
Standards and variance analysis for sales and revenue										
8. 9 Sales Mix	1	2	3	4	5	1	2	3	4	5
8.10 Sales volume	1	2	3	4	5	1	2	3	4	5
8.11 Market Share	1	2	3	4	5	1	2	3	4	5
Standards and variance analysis for marketing costs										
8. 12 Advertising costs	1	2	3	4	5	1	2	3	4	5
8.13 Sales promotion costs	1	2	3	4	5	1	2	3	4	5
8.14 Direct mailing costs	1	2	3	4	5	1	2	3	4	5
8.15 Sales trips/trade shows	1	2	3	4	5	1	2	3	4	5

SECTION 3:
PERCEPTION OF MARKETERS ON MARKET SEGMENT PROFITABILITY ANALYSIS

Please circle the degree of your agreement for the following statements

15.

1= Definitely disagree 2= Disagree 3= Neutral 4= Agree 5 = Definitely agree	
Market segment profitability	
A.1. In marketing, the key point is profitability, not the amount of sales...............................	1 2 3 4 5
A.2. Market segment profitability is very important to your marketing decisions....................	1 2 3 4 5
A.3. While some customers may be most profitable to your hotel, others may be served at a loss	1 2 3 4 5
A.4. The pricing policy you are using for each market segment maximizes your net profitability	1 2 3 4 5
Accounting systems	
A.5. The existing accounting system supplies valuable information to your marketing decisions	1 2 3 4 5
A.6. P&L statements must be re-analyzed to produce a market segment P&L statement for each market....	1 2 3 4 5
A.7. Accounting systems for hotels are designed to identify departmental profitability rather than market segment profitability...	1 2 3 4 5
A.8. Many accountants and marketers are not aware of the effects of their cost allocation decision as they only do what is common practice...	1 2 3 4 5
Costing systems	
A.9 Firms in competitive markets need a detailed, accurate, and flexible costing system...........	1 2 3 4 5
A.10 Accurate cost information in different market segments makes it possible to improve the profitability of your property...	1 2 3 4 5
A.11 The method you are using for market segment profitability analysis accurately measures the full costs of services provided to customers..	1 2 3 4 5
A.12. I am willing to adopt and enhance our cost system to a new cost approach for a better market segment profitability analysis..	1 2 3 4 5
Pricing decisions	
A.13. A more reliable and accurate cost information for each market segment helps you for better better pricing decisions..	1 2 3 4 5
A14. Right pricing decisions can be made only if you have the right cost information about your products or services..	1 2 3 4 5

Sales Volume and Profitability of Different Market Segments

32. Based on your best knowledge, please rank your market segments' sales volumes, for the following market segments:

1 = Highest volume...6 = Lowest volume
Please use similar ranking for other ***sales volumes*** *accordingly.*

a.1. Aircrews a.2.Conference groups a.3.Group travelers a.4.Corp.travelers a.5.Leisure a.6. Others

33. Based on your best knowledge, please rank your market segments' sales profitability, for the following market segments:

1 = Highest volume.............. ....6 = Lowest volume
Please use similar ranking for other ***sales profitability's*** *accordingly.*

a.1. Aircrews a.2.Conference groups a.3.Group travelers a.4.Corp. travelers a.5.Leisure a.6. Others

SECTION 4 - INFORMATION ABOUT YOUR PROPERTY

34. Ownership/management type of your property?

1. Chain owned /operated hotel
2. Franchise/independent management
3. Franchise/management contract
4. Independent owned
5. Other (Please specify) ________________

35. The segment of your property?

1. All Suite 2. Luxury 3. Upscale 4. Mid-price 5. Economy/ Budget
6. Casino Hotel 7. Other

36. The location of your property?

1. Downtown 2. Resort 3. Airport 4. Highway 5. Other

37. The number of employees of your property?

1. Less than 100 2. 100-199 3. 200-299 4. 300-399 5. Over 400

38. The number rooms of your property?

1. Under 100 rooms 2. 101-200 3. 201-300 4. 301-500 5. Over 500

39. Please mark the departments in your hotel? (Please check all that apply)

1. Rooms 2. F & B full service 3. F&B limited service 4. Beverage
5. Telecommunication 6. Casino 7 Parking 8. Guest Laundry
9. Fitness Center 10. Recreation 11 Admin& General 12. Human Resources
13. Sales& Marketing 14. Repair&Maint. 15. Other

SECTION 5 - INFORMATION ABOUT YOURSELF

40. Your position:

1. Marketing Manager 2. Assistant Marketing Manager 3. Sales Manager
4. Director of Sales/Marketing 5. Assistant Sales Manager 6. Other

41. Your gender:

1. Female 2. Male

42. Your education:

1. High School 2. Associate degree 3. Bachelor degree 4. Other

43. Your professional experiences in industry:

1. 0 -2 years 2. 3 -5 years 3. 6 -10 years 4. 11-16 years 5. Over 16 years

We appreciate you spending your valuable time to participate in this research effort.!!

APPENDIX C: IRB FORM

Oklahoma State University
Institutional Review Board

Protocol Expires: 4/22/03

Date: Tuesday, April 23, 2002 IRB Application No: HE0249

Proposal Title: COST ALLOCATION AND MARKET SEGMENT PROFITABILITY ANALYSIS IN LODGING INDUSTRY

Principal
Investigator(s):

Islam Karadag	Woo Gon Kim
121 Brumley #10	210 HES
Stillwater, OK 74078	Stillwater, OK 74078

Reviewed and
Processed as: Exempt

Approval Status Recommended by Reviewer(s): Approved

Dear PI :

Your IRB application referenced above has been approved for one calendar year. Please make note of the expiration date indicated above. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved projects are subject to monitoring by the IRB. If you have questions about the IRB procedures or need any assistance from the Board, please contact Sharon Bacher, the Executive Secretary to the IRB, in 203 Whitehurst (phone: 405-744-5700, sbacher@okstate.edu).

Sincerely,

Carol Olson

Carol Olson, Chair
Institutional Review Board

VITA (2)

Islam Karadag

Candidate for the degree of

Doctor of Philosophy

Thesis: COST ALLOCATION AND MARKET SEGMENT PROFITABILITY ANALYSIS IN THE LODGING INDUSTRY

Major Field: Human Environmental Sciences

Biographical:

Education: Graduated from the Academy of Administrative and Commercial Sciences, Bursa, Turkey, in December 1980; received Master of Science degree in Accounting and Auditing from the University of Istanbul, Istanbul, Turkey, in November 1990. Completed the requirements for the Doctor of Philosophy degree with major in Human Environmental Sciences at Oklahoma State University, Stillwater, Oklahoma, in August 2003.

Experience: Worked in different areas of the industry, including financial consultant, construction and lodging companies in entry level, supervisory and management positions from 1981 to 1998. Worked in international hotel properties as assistant Financial Controller, Financial Controller and as Director of Finance, including Hotel Conrad Istanbul, Turkey, Ramada Hotel Mersin, Turkey, and Regent Hotel Almaty, Kazakhstan. Employed by Oklahoma State University, School of Hotel and Restaurant Administration as research and teaching assistant, 2000 to 2002.

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