ADVANCES IN MANAGEMENT ACCOUNTING

ADVANCES IN MANAGEMENT ACCOUNTING

Series Editors:

Volumes 1–25: Marc J. Epstein and John Y. Lee
Volumes 26 and 27: Marc J. Epstein and Mary A. Malina
Volumes 28–30: Mary A. Malina

Recent Volumes:

Volume 30: Advances in Management Accounting Edited by Mary A. Malina

ADVANCES IN MANAGEMENT
ACCOUNTING VOLUME 31

ADVANCES IN MANAGEMENT ACCOUNTING

EDITED BY

LAURIE L. BURNEY
Baylor University, USA

MARY A. MALINA
University of Colorado Denver, USA

United Kingdom – North America – Japan
India – Malaysia – China

Emerald Publishing Limited
Howard House, Wagon Lane, Bingley BD16 1WA, UK

First edition 2019

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

ISBN: 978-1-78973-278-8 (Print)
ISBN: 978-1-78973-277-1 (Online)
ISBN: 978-1-78973-279-5 (Epub)

ISSN: 1474-7871 (Series)

CONTENTS

This page intentionally left blank

LIST OF CONTRIBUTORS

Charles Bailey	James Madison University, USA
Nancy Chun Feng	Suffolk University, USA
Nicholas Fessler	The University of Texas at Tyler, USA
Binod Guragai	Texas State University, USA
James W. Hesford	University of Lethbridge, Canada
Kelly Hoffmann	E&Y, Germany
Paul D. Hutchison	University of North Texas, USA
Ahmet C. Kurt	Suffolk University, USA
Brian Laird	Arkansas State University, USA
Mahfuja Malik	Sacred Heart University, USA
Nicolas Mangin	University of Groningen, The Netherlands
Eunsup Daniel Shim	Sacred Heart University, USA
Christopher Skousen	Utah State University, USA
Li Sun	The University of Tulsa, USA
M. Theodore Farris II	University of North Texas, USA
Charles R. Thomas, Jr	Tarleton State University, USA
Michael J. Turner	The University of Queensland, Australia
Kean Wu	Rochester Institute of Technology, USA

This page intentionally left blank

EDITORIAL BOARD

This page intentionally left blank

STATEMENT OF PURPOSE

Advances in Management Accounting (AIMA) is a publication of quality, applied research in management accounting. The series' purpose is to publish thought-provoking articles that advance knowledge in the management accounting discipline and are of interest to both academics and practitioners. The journal seeks thoughtful, well-developed articles on a variety of current topics in management accounting, broadly defined. All research methods including survey research, field tests, corporate case studies, experiments, meta-analyses, and modeling are welcome. Some speculative articles, research notes, critiques, and survey pieces will be included where appropriate.

Articles may range from purely empirical to purely theoretical, from practice-based applications to speculation on the development of new techniques and frameworks. Empirical articles must present sound research designs and well-explained execution. Theoretical arguments must present reasonable assumptions and logical development of ideas. All articles should include well-defined problems, concise presentations, and succinct conclusions that follow logically from the data.

REVIEW PROCEDURES

AIMA intends to provide authors with timely reviews clearly indicating the acceptance status of their manuscripts. The results of initial reviews normally will be reported to authors within eight weeks from the date the manuscript is received. The author will be expected to work with the Editor, who will act as a liaison between the author and the reviewers to resolve areas of concern. To ensure publication, it is the author's responsibility to make necessary revisions in a timely and satisfactory manner.

This page intentionally left blank

MANUSCRIPT FORM GUIDELINES

1. Manuscripts should include a cover page that indicates the author's name and affiliation.
2. Manuscripts should include a separate lead page with a structured abstract (not to exceed 250words) set out under four to seven sub-headings; purpose, design/methodology/approach, findings, research limitations/implications (if applicable), practical implications (if applicable), social implications (if applicable), and originality/value. Keywords should also be included. The author's name and affiliation should not appear on the abstract.
3. Tables, figures, and exhibits should appear on a separate page. Each should be numbered and have a title.
4. To be assured of anonymous reviews, authors should not identify themselves directly or indirectly.
5. Manuscripts currently under review by other publications should not be submitted.
6. Authors should email the manuscript in two WORD files to the editor. The first attachment should include the cover page and the second should exclude the cover page.
7. Inquiries concerning *Advances in Management Accounting* should be directed to:

Laurie L. Burney
Laurie_Burney@Baylor.edu

This page intentionally left blank

INTRODUCTION

This volume of *Advances in Management Accounting (AIMA)* represents the diversity of management accounting topics, methods, and author affiliations, which form the basic tenets of *AIMA*. Included are papers on traditional management accounting topics such as performance measurement, and pay and compensation systems, as well as those on broader topics of interest to management accountants such as employees' dishonesty, whether managerial ability is associated with firm performance, and CEO compensation. The articles in this volume utilize a wide variety of methods including archival data analysis and experimental studies. Finally, the diversity in authorship is apparent with affiliations from Canada, Australia, the Netherlands, Germany, and the United States.

In the first article, Hesford, Turner, Mangin, Thomas, and Hoffmann examine an interesting question about the relationship between competitor monitoring and firm performance. Using proprietary data from the hotel industry, they find that a hotel's competitor monitoring behavior is positively associated with its performance outcomes, measured as (i) revenue per available room, (ii) average daily rate, and (iii) occupancy rate. This article further documents a positive relationship with performance when the hotel monitors hotels above its class, yet a negative relationship when it monitors those hotels below its class.

In the second article, Malik and Shim address a timely issue that has received quite some attention in the media: is CEO compensation in financial institutions partly responsible for the 2008 financial crisis and has this issue been resolved in the postcrisis period? Using data from the US financial service institutions, they study the economic determinants of executive compensation both pre- and postcrisis periods. This article provides insight into the compensation/performance relationship within the financial services industry.

Continuing the focus on CEO compensation, Kurt and Feng delve into this literature with thought provoking and practically relevant research. Specifically, the article details an investigation into whether it is beneficial to include qualitative performance measures in CEO bonus contracts. Collecting data from firms' proxy statements, Kurt and Feng find that when qualitative criteria are included in CEO bonus contracts, not only is performance across an array of measures lower but that income-increasing accruals are higher.

The fourth article by Bailey, Fessler, and Laird extends prior literature on agents' dishonesty by investigating two organizational variables: performance-based pay and performance monitoring. In their experimental setting, agents have the opportunity to engage in dishonest behavior for personal gain; yet, the principal has no mechanism for detecting the dishonesty. The authors explain the findings of an interaction effect using arousal theory, suggesting that performance-based pay heightens the focus on monetary awards, which leads to

decreased honesty. However, the perception of being monitored helps mitigate this effect.

In the fifth article, Skousen, Sun, and Wu examine the relationship between managerial ability and discontinued operations. They find that managerial ability has a negative relationship with the likelihood and magnitude of discontinued operations. While prior studies have shown that higher ability managers are less likely to manage earnings by manipulating accruals, this article aims to build on this work by showing that higher ability managers are less likely to shift expenses to discontinued operations from core operations.

Concluding this volume, Guragai, Hutchison, and Farris address a gap in the cash-to-cash cycle (C2C) by examining the association with long-term profitability and liquidity. Conventional wisdom and finance theory suggest that tying up funds in working capital leads to an increased cost of capital. C2C, by measuring a company's use of working capital, is an important financial evaluation tool. Prior research indicates that a longer C2C cycle is negatively associated with current period performance. This article extends these findings by documenting the performance effects at longer time horizons, and expands the analyses to study the results across industries and firm sizes.

The six articles in Volume 31 represent relevant, theoretically sound, and practical studies that extend our knowledge within the management accounting discipline. These articles manifest the journal's commitment to providing a high level of contribution to management accounting research and practice.

Laurie L. Burney
Mary A. Malina
Editors

COMPETITOR MONITORING AND REVENUE PERFORMANCE: EVIDENCE FROM THE HOSPITALITY INDUSTRY

James W. Hesford, Michael J. Turner, Nicolas Mangin, Charles R. Thomas Jr., and Kelly Hoffmann

ABSTRACT

This study examines how firms' use of competitor-focused accounting information, specifically competitor monitoring information, impacts their pricing, demand, and overall revenue performance. The monitoring activities examined are the scope of monitoring, monitoring above and below one's own hotel class (i.e., market segment), and the extent of reciprocity of monitoring. Competitor analysis is a central element in strategic management accounting (SMA), yet little empirical research has been done since companies do not disclose competitor monitoring activities. Proving the value of competitive monitoring provides strong support for SMA. Archival, proprietary monitoring information regarding pricing, demand, and revenue were obtained from one of the largest hotel markets in the United States. Using regression, we modeled the relationships between performance measures (pricing, demand, and revenue) and monitoring behaviors, while controlling for quality (hotel characteristics and management skill), competitive intensity, hotel class, geographic location, and ownership type. Our results indicate that two aspects of competitor monitoring impact hotel pricing that, in turn, impacts hotel demand and revenue performance. Specifically, a hotel monitoring more competitors (what we refer to as Scope) achieves higher prices with unchanged demand, resulting in higher revenue performance. Most hotels monitor within their class. However, deviating from one's class has profound outcomes: looking at lower (higher) quality hotels results in a hotel setting lower (higher) prices,

Advances in Management Accounting, Volume 31, 1–22

ISSN: 1474-7871/doi:10.1108/S1474-787120190000031002

resulting in higher (unchanged) demand and lower (higher) revenue performance. Surprisingly, we did not find support for the reciprocity of monitoring. That is, whether the competitors monitored by a hotel, in turn follow the target, has no impact on hotel revenue performance outcomes. While the SMA literature notes the importance of competitor monitoring, this study fills a gap in an important, under-researched area by documenting the link between competitor monitoring behaviors and organizational revenue performance. This may help promote greater diffusion of SMA practices.

Keywords: Competitor accounting; competitor monitoring; strategic management accounting; revenue management; revenue drivers; hotel

INTRODUCTION

The objective of this study is to examine how firms' competitor monitoring behavior impacts their pricing, demand, and overall revenue performance. Our focus is on the scope of monitoring, monitoring above and below one's own hotel class (i.e., market segment), and the extent of reciprocity of monitoring. Firms compete in many different ways, but to be successful a firm must develop a competitive advantage over its rivals (Barney, 1991; Porter, 1980). Further, owing to the nature of their product (i.e., perishability and fixed capacity) and industry (i.e., customer demand elasticity) (Kimes, 1989; Weatherford & Bodily, 1992), the contextual setting for this study, hotels, is appropriate because discriminatory pricing strategies are widespread and have proven successful in hotels (Law, Chan, & Goh, 2007; Pan, 2007). This has resulted in the application of revenue management practices becoming more sophisticated and widespread than in other businesses (Anderson & Xie, 2010; Noone & Hultberg, 2011).

Our findings are based on archival, proprietary data collected from 416 hotels in a major metropolitan market in the United States. Our sample firms vary along numerous dimensions (size, ownership, region, etc.), providing us the opportunity to observe competitor monitoring practices (number of competitors monitored, classes of competitors monitored, and monitoring reciprocity). Virtually all hotels in the market engage in monitoring, and we have data on virtually all firms, so our study is not impacted upon by nonresponse bias. With regard to monitoring scope (i.e., number of competitors monitored), we find a positive association with product pricing, with no adverse effect on demand. Accordingly, total revenue increases with monitoring scope.

The importance of looking above one's class appears to be greater than monitoring below. On average, less than half of a firm's competitive set is within its own class, and whether the firm chooses to look above or below matters. Firms that display a tendency to look above their class to a greater extent than they monitor below their class were found to price their service offerings significantly higher, with no loss in demand, so these firms have higher revenue performance.

Firms with a tendency to look downward to a greater extent than they monitor upward have lower prices, resulting in increased demand. The reduction in prices, however, more than offsets the increased demand, resulting in lower revenue performance. Contrary to our predictions, monitoring reciprocity was found to have no impact on pricing, demand, or revenue performance.[1]

While our contextual focus is hotels, the findings of this study will be of interest to other firms with perishable outputs (e.g., airlines and restaurants). Revenue management involves the practice of dynamically pricing perishable outputs (products or services) and selectively allocating scarce capacity to maximize total revenue (Chiang, Chen, & Xu, 2006). From this perspective, we draw motivation from revenue management, an area of growing interest in management accounting due to its synergies with strategic management accounting (SMA) (Bromwich, 1999). Our study contributes to the SMA literature by documenting how competitor monitoring improves revenue performance through its impacts on pricing and demand. Further, SMA adoption has been limited (Langfield-Smith, 2008) and our findings, which demonstrate considerable support for competitor monitoring, should further the diffusion of SMA practices.

The remainder of this study is structured as follows. The next section reviews the literature, which is followed by development of the research hypotheses. The third section describes the data source, provides variable definitions, presents the regression models, and summarizes descriptive statistics. The fourth section provides the results of the hypothesis tests and the fifth section concludes.

LITERATURE REVIEW

Management accounting information has traditionally focused on the internal business environment. The underlying premise is that the provision of management accounting information enables managers to make more effective decisions (Christensen & Demski, 2003), which improve firm performance (Chenhall, 2003). Studies with this internal perspective have documented a positive association between greater management accounting information use and firm performance, but the extent of the association depends on the context (e.g., Abernethy & Guthrie, 1994; Baines & Langfield-Smith, 2003; Chong & Chong, 1997; Cravens & Guilding, 2001; Gul & Chia, 1994; Hoque & James, 2000; Ittner, Larcker, & Randall, 2003; Mahama, 2006; Mia & Chenhall, 1994; Mia & Clarke, 1999; Scott & Tiessen, 1999).

While proving a positive association between the creation and use of internally-focused management accounting information and firm performance is important, research examining the association between externally-oriented SMA information and firm performance is less common. SMA evolved from an acknowledgment that traditional management accounting techniques fail to provide information needed by managers to externally monitor competitors (Guilding, Cravens, & Tayles, 2000). SMA provides an external, long-term, forward-looking, and strategic focus (Guilding et al., 2000). It is surprising that, while "the number

of publications, in both the professional and academic literatures, that address SMA runs into the thousands" (Langfield-Smith, 2008, p. 213), there remains no agreed-upon definition of SMA (Nixon & Burns, 2012).

Simmonds (1981) was the first to use the term "strategic management accounting," defining it as "the provision and analysis of management accounting data about a business and its competitors, for use in developing and monitoring business strategy" (p. 26). Still, few studies have empirically examined the relationship between the use of SMA and firm performance. SMA research has established, in cross-industry studies (e.g., Cadez & Guilding, 2008) and in specific industries (e.g., Turner, Way, Hodari, & Witteman, 2017), that a positive association exists between SMA use and firm performance. However, SMA in these studies (e.g., Cadez & Guilding, 2008; Turner et al., 2017) has been examined at a broad level of abstraction, ignoring its constituent components.[2] These components include competitor accounting, customer accounting, attribute and strategic costing, benchmarking and integrated performance measurement, and strategic pricing and decision making (Cadez & Guilding, 2008).

Bromwich (1990) offered another commonly applied definition of SMA, which highlighted SMA as involving "the monitoring of the enterprise's strategies and those of its competitors" (p. 28). From Bromwich's definition, the link between SMA and competitor monitoring is apparent. In this study, we focus on competitor monitoring behavior, which fits within the competitor accounting subset. Competitor monitoring, the most widely used SMA technique (Cinquini & Tenucci, 2010; Guilding, 1999), is the "analysis of competitor positions within the industry by assessing and monitoring trends in competitor sales, market share, volume, unit costs, and return on sales" (Cadez & Guilding, 2008, p. 857). While there are two additional attributes that fit within the competitor accounting dimension – competitor cost assessment and competitor performance appraisal (Cadez & Guilding, 2008) – we take a revenue management perspective in this study and do not examine cost components of SMA.

Despite the defined relationship between SMA and competitor accounting, relatively few studies have focused on the competitor accounting dimension of SMA. Early research by Guilding (1999) examined adoption rates and perceived helpfulness of competitor-focused accounting, along with the contingent factors informing its usage. As previously mentioned, most studies have continued to focus on SMA as a generic concept, rather than its constituent components.[3] Later, Anderson and Guilding (2006) examined the nature and potential of competitor-focused accounting practices in a large hotel. Despite the theoretical benefits of competitor-focused accounting, the formalization of such information in hotels was found to be less than what was expected. The main uses of competitor-focused accounting were to sensitize hotel staff to competitors' strengths and strategy development.

Anderson and Guilding (2006) provides motivation for this study. That is, should the benefits of competitor monitoring be proven, it may promote greater adoption of SMA practices. Our study offers a different type of analysis, however, because it focuses on the impact of competitor monitoring behaviors on firm revenue performance. For example, from a revenue management perspective,

Simmonds (1981) was among the first to highlight how reliance on internally-generated cost-volume-profit (CVP) calculations were inadequate for making good pricing decisions. Each competitor was said to face a different CVP situation and competitors could not follow a price-lead, or even follow in perfect step, because they would each act to defend or build their own strategic positions. The suggested solution was to make use of externally-oriented SMA information to facilitate pricing strategies, which is what we examine in this study.

Important to this study is that a firm's strategic positioning in the market is a combination of its customer segment and price point (Dube, Johnson, & Renaghan, 1999). The success of discriminatory pricing strategies has a direct, positive impact on competitiveness, in terms of revenue and demand (Kim, Cho, Kim, & Shin, 2014). Further, in our setting, firms have very high operating leverage and profits are sensitive to modest fluctuations in demand (Singal, 2015). These characteristics, along with a high sensitivity to environmental and economic uncertainty (Mia & Patiar, 2001), mean that it can be difficult for firms to match supply with demand in the short-term because of their inflexibility of supply (Hsu & Jang, 2008; Singal, 2012). Pricing is therefore a key element to cope with short-term demand (Heo & Hyun, 2015). Understanding competitors' pricing through monitoring plays, therefore, a critical role in improving one's own pricing strategy, which is expected to favorably impact their ability to generate revenue.

One pricing strategy is for firms to match the price and timing of a sale with customers' needs, to maximize sales in light of the firm's fixed capacity and perishable output (Noone & Mattila, 2009). If perishable output is unsold – to the detriment of profitability – firms will make sales at both high- and low-price points for the same product. The highest price drives profit (Anderson & De Palma, 2005), but the lowest price need only provide some contribution beyond marginal cost. Marketing managers are tasked with selling excess capacity even if the price falls below the standard asking price.

Pricing and its impact on demand are key components that influence total revenue, but the overall effect of price changes is not easy to predict (Simmonds, 1981). Aggressive price reduction, for example, might lead competitors to withdraw from the market. Alternatively, competitors may respond through fierce price reductions in order to retain demand (e.g., the frequently observed price wars in the airline industry). Further, it is increasingly easy for customers to make price comparisons, increasing pressure to be competitive on price, and to monitor competitor offers (O'Connor, 2010).

HYPOTHESIS DEVELOPMENT

Monitoring Scope

Managers can use information acquired from monitoring competitors to gain knowledge for informed pricing decisions. Specifically, firms obtaining more information about competitors can create an information asymmetry between themselves and competitors who are less intense at implementing information

collection processes through monitoring (Li & Calantone, 1998). A firm with more competitor information can use its knowledge for strategic advantage.

Resource-based theory suggests that monitoring more competitors will result in strategic benefits because it will yield competitive advantage by enabling managers to select the best strategy to defend or extend their competitive position (Day & Wensley, 1988; Hunt & Morgan, 1995). The outcome of superior resource allocations through better information is improved performance (Baines & Langfield-Smith, 2003; Christensen & Feltham, 2003) from making better-informed decisions (Baines & Langfield-Smith, 2003; Chenhall, 2003).

A manager's objective is to make the best pricing decision so that revenue performance improves, if for no other reason that revenue is a key driver of firm profitability. For example, a manager may determine the firm can charge a higher price such that a resulting decrease in demand would be less than the uplift in price, resulting in higher overall revenue. Of course, this is one of many possible combinations between pricing, demand and revenue performance. The essence of our argument is that a higher monitoring scope leads to better information that, in turn, provides a better pricing strategy and associated higher revenue. Hypothesis 1 is worded in a manner consistent with this expectation:

H1. Monitoring scope is associated with a pricing strategy such that, when related with its effect on demand, results in higher firm revenue performance.

Monitoring Above and Below

A firm that monitors competitors may gain insight not only from competitors within the same class as itself but also from competitors in a different class (i.e., looking above or below). According to resource-based theory, developing market knowledge, by monitoring competitors, is a resource that yields competitive advantage by helping managers select the best strategy, such as pricing strategies, to defend or extend their competitive position (Day & Wensley, 1988; Hunt & Morgan, 1995). The provision of better information results in superior resource allocations and the outcome is improved performance (Baines & Langfield-Smith, 2003; Christensen & Feltham, 2003). This assumes that better information enables managers to make more effective decisions (Baines & Langfield-Smith, 2003; Chenhall, 2003). We contend that monitoring above or monitoring below is a source of strategic competitive advantage because it provides managers with a greater diversity and quality of information. This facilitates managers' making better pricing strategy selections to extend or defend their competitive position. If monitoring above or monitoring below provides a better quality of information, improved performance follows (Baines & Langfield-Smith, 2003; Christensen & Feltham, 2003).

As a firm may only monitor above more than below or vice versa, we thus posit two separate hypotheses:

H2a. Monitoring above is associated with a pricing strategy such that, when related with its effect on demand, results in higher firm revenue performance.

H2b. Monitoring below is associated with a pricing strategy such that, when related with its effect on demand, results in higher firm revenue performance.

Reciprocity of Monitoring

While a firm is able to obtain information about competitors through monitoring, it may itself be the target of competitors' monitoring efforts. When two firms monitor each other, we say there is "reciprocity of monitoring." Our ideas are best understood with an example. Imagine that *Acme*, an upper-midscale hotel, chooses a competitor set consisting of five hotels. Some or all of the five hotels *Acme* monitors may follow *Acme*. Anecdotal evidence suggests that, where there is a higher level of reciprocity of monitoring, the result could be greater competition or collusion. The industrial organization literature highlights that, in the product market, tacit collusion in price setting among competing firms is more easily sustained when competing firms mutually observe each other's prices and sales (Motta, 2004; Stigler, 1964; Tirole, 1988). Alternatively, reciprocity of monitoring may stimulate competition as opposed to collusion because it can make comparisons more salient, thereby stimulating a desire to compete (Hannan, Towry, & Zhang, 2013).[4]

The Internet has made most product/service markets very competitive. Online customers are knowledgeable about the lower transaction costs that e-commerce practices afford, meaning that they expect lower prices than in traditional markets (Kim et al., 2014). Lower information search costs and easy price comparisons have led to decreased price dispersion and lower prices in online markets (Tang, Smith, & Montgomery, 2010). Price changes are likely to start price wars, leading to losses across the market with little individual market share gain (Enz, 2003; Kim, Bojanic, & Warnick, 2009). While the threat of price wars could lead to collusion, the threat of criminal prosecutions likely limits such behavior.

Based on the discussion above, we expect that greater reciprocity of monitoring will trigger greater competition as opposed to collusion and will therefore result in lower revenue performance. There could be any number of combinations between price and demand that would lead to this reduction in revenue. Our argument is that greater reciprocity of monitoring will impact on pricing in such a way that when related to its effect on demand, the result will be lower revenue performance. We thus state our final hypothesis:

H3. Reciprocity of monitoring is associated with a pricing strategy such that, when related with its effect on demand, results in lower firm revenue performance.

RESEARCH DESIGN

Data

We obtained proprietary data on virtually all hotels operating in a major metropolitan market in the United States during the year 2011. A hospitality

data company collects confidential revenue and supply data from participating hotels. The participation rate is approximately 95% of chain hotels (e.g., Marriott, Holiday Inn, and Hilton) and a large number of independent hotels, so our data set is effectively the entire market. Hotels are classified, nationally, into distinct classes based on product price (i.e., hotel average daily rate). With most independent hotels tending to be small, family-owned businesses, our sample reflects more than 98% of the available rooms in the metropolitan market (a total of 95,000 rooms).[5] The market is divided into downtown, airport, and multiple suburban market areas. Ownership status and brand affiliations are also coded.

Our data supplier provides aggregated data to hotels according to customer-specified groups of competitors. This aggregated data, along with rules restricting changes, means that individual hotel data is not reported, thereby ensuring confidentiality of each hotel's sales data. In addition to the property data, we were provided with monitoring data with nonidentifiable codes; that is, we know which hotels a specific hotel is monitoring, but only with codes rather than hotel names. The Appendix provides additional description regarding the make-up of the data set.

What makes our data set unique is that, unlike other studies, we know the firm is monitoring specific firms because they are paying monthly to receive competitor information. If the data weren't used, a hotel would stop participating or change the competitors being monitored. The set of competitors selected by a hotel is referred to as their "competitive set," or "compset." In order to subscribe to the data, a hotel must also contribute its own data. Data are collected nightly, with reports being sent electronically each month to participating hotels. Further, the data provided to us is the disaggregated data.

Panel A of Table 1 summarizes the number of hotels by hotel class and geographic area. In panel B, we tabulate average daily rate (ADR) by area and hotel class. Hotel occupancy rate by area is shown in panel C, and panel D tallies hotel ownership structure by hotel class.

Table 1. Sample Characteristics.

Panel A: Number of Hotels by Area and Hotel Class

Area	Upper-upscale	Upscale	Upper-midscale	Midscale	Economy	Area Total
Airport	10	9	10	4	5	38
Downtown	34	12	7	1	3	57
West	15	26	19	6	18	84
North	4	3	2	1	4	14
Northwest	6	13	26	12	21	78
South	2	6	15	9	11	43
Southwest	0	5	23	11	13	52
Far North	4	12	16	5	13	50
Class total	75	86	118	49	88	416