Session C3

Advancing Managerial Accounting Theories: Integration of Big Data Insights for Customer-Centric Accounting in Chain Hotels - Ganna Demydyuk and Frederick Ng

During the post-pandemic recovery and staff resignation that hit the hospitality and tourism industry, effective resource allocation and relevant strategic decisions are of great importance. The complexity of this type of decisions emphasizes the critical role of accounting information in enabling exchanges in marketing and finance interface, as it requires an understanding of cost and profit drivers at the customer, firm, and industry levels. In experience-based hospitality businesses integration of customer metrics into accounting, as a set of controls is especially important (Assaf & Magnini, 2012; Downie, 1997; McManus, 2013; Nemeschansky, 2020).

Yet customer metrics is often a missing element in accounting models, for several reasons raised from prior literature into cost and profit driver research. The current body of knowledge is fragmented across three disciplines: marketing, accounting, and economics, each promoting own theories. Many accounting cost-driver models emphasize cost over revenue while claiming to be revenue-driver models as discussed by Shields & Shields (2005). Marketing literature that largely advances revenue drivers theme focuses in turn on customer-level metrics (Gupta & Zeithaml, 2006; McManus & Guilding, 2008).

Taking it a step further, an integrated marketing-accounting cost-driver model called Experience Accounting (Andersson & Carlbäck, 2009; Carlbäck, 2010) suggests that key experience-based elements of customer satisfaction drive revenue through customer loyalty and willingness to pay. Thus, cost accounts must be linked to single experience elements and guide resource-allocation decisions by the importance-performance score of these single elements (e.g., Busacca & Padula, 2005; Matzler, Bailom, Hinterhuber, Renzl, & Pichler, 2004; Nemeschansky, 2020). Despite their overreaching ideas, these studies provide little guidance for the accounting discipline, mainly due to unavailability of quantifiable customer experience information that could potentially bridge the marketing and accounting perspectives.

Missing empirical evidence and lack of theoretically consistent models hinder the advancement of customer-centric accounting systems, effective decision making, and cross-functional collaboration in creating more holistic approaches to management control (e.g., Huefner & Largay, 2008). The demand for cross-level economic models incorporating customer value, profitability, and shareholder value, together with structural and operating costs, necessitates further modelling and empirical research. This research gap has been clearly identified by Shields & Shields (2005) and Banker & Johnston (2007), who called for theory-consistent cross-level models reflecting endogeneity and simultaneity of cost, revenue, and profitability drivers, and incorporating variables capturing customer value and satisfaction.

This study attempts to integrate customer-level behavioral revenue drivers into a hotel profitability model built on property-level information, thus identifying the key variables for establishing the accounting exchange to enable the marketing and finance interface (McManus, 2013).

THEORETICAL CONTRIBUTION

The present study raises three critiques about prior literature into cost and profit driver research. First, marketing and accounting often prioritize different aspects of a business, with marketing focusing on revenue and accounting on cost (e.g., Huefner & Largay, 2008). Second, empirical research into cost and profit driver models has sought to develop generalisable evidence about how various revenue and cost drivers affect profitability. The issue with the aim of generalisability is that even similar industries and firms have individual profit drivers (e.g., Andersson, 2007; Pine & Gilmore, 2011). Third, prior research was limited by the availability of customer-level data, requiring resource-intensive and context-specific approaches, such as customer and employee surveys, or propertarity data (e.g., Banker & Johnston, 2007; Shields & Shields, 2005).

The recent availability of Big Data can facilitate the holistic empirical examination of cost and profit drivers envisaged by Banker & Johnston (2007) and Carlbäck (2010, 2022). In this paper, we complement the cost, revenue, and profit driver accounting view with customer-level metrics using a representative sample of hotel properties, combined in a single endogenous model. Figure 1 depicts the data structure and conceptual model of this study. Our model aims to verify whether achieving higher satisfaction in certain review categories is associated with higher expenditures and is reflected in both the top and bottom lines.

Integrating accounting, operating and structural information from corporate owned chain hotels with customer experience ratings, we extend previous work in the area of Strategic Management Accounting and Strategic Cost Analysis (Bromwich, 1990; Hogreve, Iseke, Derfuss, & Eller, 2017). Rooted in Industrial Organization Economics literature (Scherer & Ross, 1990), these studies seek to understand how organizational competitive advantage is influenced by its strategic structural and executional cost drivers. However, SMA and SCA models were not extended to the customer perspective, mainly due to deficiencies in measurement and accessibility of customer value (e.g., Banker & Johnston, 2007; Shields & Shields, 2005).

The deployment of quantifiable customer experience information obtained from Big Data is sought to address these limitations and to deepen the customer value perspective of competitive advantage. Thus, this study bridges the economic perspective of SMA and SCA and the marketing theory of Resource Advantage of Competition (Hunt & Morgan, 1995) combining a resource (dis)advantage with customer value.

By suggesting an empirical model that facilitates more incisive examination of resource and value relationships within hotel firms, rather than at a generalizable level, we advance the Contingency Theory of management accounting to modern requirements (Burns & Stalker, 1961; Grabner & Moers, 2013; Otley, 2016). A customer-centric accounting view underlying the interrelated value-based control mechanisms of a hotel firm as an overreaching goal of this study, contributes to the current accounting debate on the complementarity of management controls of different function (Bedford, 2020; Gerdin, Johansson, & Wennblom, 2019; Grabner & Moers, 2013).

DATA AND ANALYSIS

The data for the study are based on approximately 450 corporate-owned hotel properties from six publicly listed U.S. hotel chains and consist of four data sets. All data covers 16 years of performance (2004-2021).

The first and main dataset was delivered by the STR SHARE center and covered detailed annual P&L data at an individual property level. Basic property information, including business profile and available amenities, also comes from the STR Census database. The other three datasets are customer reviews, including text and star ratings that were scraped from booking.com (165.000 records), TripAdvisor (479.000), and Google (950.000).

To ensure anonymity, hotel names were replaced with a SHARE ID, which were consistent across different datasets. The reviews from the three websites were merged into a single database, where individual review ratings were grouped into an annual average. We thus, estimated average annual satisfaction ratings for each hotel property and each review site, which were further integrated into the P&L Host Reports. The detailed revenue and expense information from the latter was grouped by three key departments: Rooms, F&B, and Hotel Amenities. Host Reports contained Census database information.

Following prior studies in the SCA stream, we deploy mediation path analysis to examine causal relationships between different elements of customer experience, satisfaction, and various controls such as hotel class, pricing model, type of hotel, and location (i.e., Gerdin & Greve, 2004; Luft & Shields, 2003). We used annual observations to link various satisfaction attributes to the associated costs, departmental revenues, and profitability. As depicted in Figure 1, our model tests the impact of customer satisfaction elements on resource consumption and the associated economic outputs and financial outcomes. For this purpose, we estimate revenue, costs, and gross profit per room night sold, and measure profitability by estimating the net profit margin.

FINDINGS

This is a “work-in-progress” early stage research project. While the dataset is prepared for testing, our preliminary results are not yet in a reportable state. We expect a crystallization of model and the analysis by the end of November, so that we would be able to present and discuss them with academic peers.

MANAGERIAL IMPLICATIONS

The main implication of this study is ranking various experiences of hotel guests according to their cost-satisfaction and satisfaction-profit relationships from different perspectives. This shall guide hotel managers in allocating scarce resources based on the demands of their customers and the control of profit targets. As hotel companies experience significant challenges in the retention and acquisition of their workforce, they require guidance in relevant strategic decisions for the future. By testing the relationships between departmental payroll, satisfaction, and profitability, our findings can provide insights for strategic investments in digitalization, the education pipeline, and hotel configuration. Our results and framework can be directly applied to the analysis of user-generated content for internal control and investment purposes, as they provide a critical view of the effectiveness of current resource allocation.

The findings of this study will provide useful underpinnings for accounting information systems by making a further step in adjusting various cost accounts to customer experience accounts and enhancing customer centricity, thus facilitating the marketing-finance interface in experience-based industries.

Households: The Missing Link Between the Tourism Satellite Account (TSA) And the System of Environmental-Economic Accounting (SEEA) - Neven Ivandic (Zoom)

The Tourism Satellite Account (TSA) has become an integral part of tourism statistics in many countries all over the world. As a deterministic model that originates from national accounting, it measures the direct contribution of tourism consumption to the national economy and describes the interrelations between tourism and different aspects of the national economy.

Although TSA brings significant benefits for determining and monitoring the effects of national tourism policy, its analytical framework requires expansion because it does not provide a comprehensive review of key impacts of tourism activity which are necessary for defining the policy of sustainable tourism development.

The basis for rigorous and consistent measurement of the economic and environmental effects of tourism is given by the system of national accounts (SNA 2008) which establishes common concepts and classifications for drawing up the methodological framework of two satellite accounts: The System of Environmental-Economic Accounting (SEEA) and Tourism Satellite Account: Recommended Methodological Framework (TSA: RMF). However, the development of a methodological framework for an integrated statistically founded measurement of the environmental and economic impacts of tourism is in the pilot phase and still lacks a sound, internationally harmonized, basis. In 2018 UNWTO published a methodological document Linking the TSA and the SEEA: A Technical Note that has yet to be operationalized in practice. Further improvement of methodology is especially important in the context of the current work on the preparation of a new version of the SNA 2025 and development of the conceptual framework such as Measuring the sustainability of tourism (SF-MST).

Based on methodological issues related to the differences in the classification of production and tourist activities and the adequacy of the use of tourism shares, the paper aims to analyze the implications of the role of households. Understanding the role of household is growing in importance as a result of the emergence of a collaborative economy, as a segment of the total supply of accommodation for structuring the economic and environmental accounts of tourism.

The adequacy of the structure of the tourism economic and environmental accounts is further analyzed from the perspective of the use of personal vehicles, especially concerning residential and territorial accounting principles. The paper ends with a proposal for corrections of the economic and environmental accounts of tourism as a basis for further discussions on the necessary establishment of an internationally harmonized methodological framework for rigorously measuring the economic and environmental effects of tourism.

Mapping Tourist Destination Networks Based on Hotel Reservation Data - Yong Chen and Giuliano Bianchi

This study examines the key properties of tourist destination networks. We constructed a network data set using a large collection of tourist trip data that contains 217,686 distinct trips taken by 200,153 tourists across 39,901 cities in 195 countries. Using the data set we mapped and simulated the tourist destination networks using three canonical network models, namely the Erdős–Rényi network, Watts–Strogatz network, and the Barabási–Albert network. We found that the destination networks exhibit long diameters, in contrast to many social and economic networks, but conform to the high clustering and scale-free properties. We found that none of the three network models can adequately capture the formation mechanisms of the destination networks; the destination networks share certain, but not all, of the properties of each of the three network models. Such inadequacy calls for developing new models to study the network formation of tourist destinations.