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Benchmarking sales staffing efficiency in dealerships using extended data envelopment analysis

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A B S T R A C T

This study presents an approach to benchmark dealer performance in a business-to-business setting through a rigorous efficiency analysis of sales staff allocation. Using a series of basic and extended data envelopment analysis (DEA) models on data collected from a survey of self-reported financial and statistical information, this research assesses dealer efficiency and compares the efficiency scores to traditional financial benchmarking. Findings support the minimization of outsourcing services that are customer interactive and highly specific to a transaction to differentiate the dealer from its competition. Integrating the results from DEA models, manufacturers obtain a comprehensive view of allocating sales staff to increase dealer efficiency and generating a complementary approach to traditional financial ratio benchmarking in determining best practices to other dealers.

1. Introduction

Manufacturers monitor independent dealer performance through industry benchmarks using operational ratios (e.g., total revenue per square feet) and financial ratios (e.g., net profit margin) to ensure a consistent and fiscally stable distribution channel. These benchmarks typically represent the average performance, assume non-extreme value distributions, and provide dealers with the opportunity to identify improvement areas by comparing their performance relative to that of similar companies. The practice of encouraging dealers to imitate others leads to mimetic isomorphic behavior in the industry and influences organizational decision-making, accordingly (DiMaggio & Powell, 1983). However, such benchmarking approaches might also lead to a paradoxical situation, as the copying of best practices is not likely to be an ideal or feasible improvement avenue for a dealer (White & Dieckman, 2005). Thus, the challenge emerges to deconstruct the system and find a rigorous process, rather than an imitative routine, in order to create a custom metrics solution for a dealership organization.

A dealer plays an important role in the sales of complex products by informing customers about the product, working with them to discover the best solution for their needs, and providing them with after-sales support (Sharma & LaPlaca, 2005). To achieve these objectives, sales personnel plays a critical role. Thus, labor expenses constitute a major component of operating expenses for a dealer since sales personnel productivity is a major concern for dealers and their primary manufacturer suppliers (Kuhn, 2005). Some dealers choose to outsource key sales activities to decrease costs, increase flexibility, and hence generate greater personnel productivity measures (Abraham & Taylor, 1996). However, greater productivity does not necessarily mean higher profits. Most often, dealers struggle to balance employee productivity, the use of outsourced services, firm profitability, and customer satisfaction. Therefore, manufacturers recognize that the sales performance of a dealer is a complicated and multidimensional metric requiring an in-depth evaluation of different components including resource allocation and sales mix.

The main purpose of this research is to develop a systematic approach that will help manufacturers to improve the evaluation of dealer performance. To accomplish this purpose, this study has two objectives. First, this research uses a quantitative efficiency approach, data envelopment analysis (DEA), to identify best practices for achieving dealer efficiency by examining the resource allocation of sales activities internally and through outsourcing. Second, this study explores whether the manufacturer's financial ratio benchmarking system to rank the dealers is compatible with a more sophisticated efficiency perspective. This research examines a sample of forty-seven office furniture dealers from a benchmarking survey of self-reported financial and statistical information. The theoretical framework draws on transactional cost analysis and institutional theory to examine the elements in assessing efficient sales resource allocation and the effective use of benchmarking to establish the legitimacy of following industry best practices. Therefore, the study contributes to the literature by exploring various models of DEA to examine sales staffing allocation decisions in dealerships, and

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comparing findings with traditional financial ratio benchmarking. The results provide insight into applying DEA to examine sales and productivity in a competitive dealer environment and demonstrate the effectiveness of this analytical technique in determining best practices to other dealers.

Following the introduction, Section 2 provides the dynamics of the office furniture industry and Section 3 provides a brief literature review on outsourcing and benchmarking. Section 4 explains the methodology including data collection and analysis techniques. Section 5 presents the analysis findings and Section 6 provides a discussion of the results along with managerial implications. Finally, the limitations of the research and future research avenues conclude the article.

2. Industry background

This study examines North American dealers of office furniture for large to middle-size installations in the commercial, medical, and government sectors. Over 70% of the office furniture sales in the United States are through independent dealerships that sell products from multiple manufacturers and offer various services within a geographical area. Findings from studies in office furniture buying highlight the importance of dealers to provide design, inventory, credit, and related services to customers (Woodside, 2003). In this study, the full service furniture dealerships offer premier products at competitive prices, a full range of furniture services, and customer service.

With the prevalence of modular office systems and new technology demands from telecommunication and software innovations, the selling of office furniture has become increasingly complex. Office furniture purchases involve processes linking several parties including manufacturers, dealers, customers, and outside influencers (Woodside, 1988). The dealership often provides design services to customers to ensure accurate plans and specifications, conformance to client's requirements, customer satisfaction, and project implementation. The design group helps make sales by providing the customer with creative solutions for facility needs and offering advice that go beyond just product use. Another important consideration is the timely delivery and installation of the office furniture. Along with coordinating the delivery of the furniture from the manufacturer, the dealer also installs and assembles office furniture, including modular systems furniture, traditional stand-alone furniture, accessories, and wall-hung units, within client facilities. Overall, dealers are responsible for timely completion of the work, quality of workmanship, and customer satisfaction (OFDA, 2004). The industry has typically relies on some level of outsourced design and installation services to supplement in-house capacity. In recent industry benchmark studies, most dealers indicate that they have further reduced staff and expenses in response to lower sales. Additionally, they have completely outsourced installation, warehouse, and other services.

3. Literature review

When firms engage in outsourcing, they assess the productivity of their in-house functions and decide to outsource when comparable products or services are available at a lower cost. This study focuses on the service aspect of a dealer distribution setting for business-to-business (B2B) products. Abraham and Taylor (1996) identify three general reasons for contracting out services: i) wage and benefit savings, ii) smoothing the workload of the regular workforce, and iii) need for specialized services. Transaction cost analysis (TCA) can explain the decision for outsourcing based on relative costs and efficiency (Murray & Kotabe, 1999). Based on assumptions of bounded rationality and opportunism, TCA generally includes transaction characteristics of asset specificity, uncertainty, and frequency to determine the most efficient governance structure for addressing safeguarding, adaptation, and performance evaluation problems in a transaction (Williamson, 1985).

Sales of complex products have various characteristics relating to human behavior assumptions of TCA (i.e., bounded rationality and opportunism) and the uncertainty dimensions of the transaction (Sharma & LaPlaca, 2005; Williamson, 1985). In relation to bounded rationality, a selling organization needs accurate market information to locate sales and predict upcoming volume for efficient staff allocation. Opportunistic behavior may be present, as interaction with the customer to solve problems requires a long-term and personal relationship vulnerable to exploitation. The industry context includes two types of uncertainty. First, environmental uncertainty from external economic conditions and industry rivalry affects to volume fluctuations. Second, behavioral uncertainty refers to difficulty in monitoring and evaluating performance of a service that is immediate, intangible to a certain extent, and that involves a long association with a specific client.

In this context, this study examines the role of asset specificity and transaction frequency in outsourcing decisions. Asset specificity refers to substantial investments made in resources specific to a transaction, while frequency refers to how often the transaction occurs (Williamson, 1985). For service firms, Erramilli and Rao (1993) suggest that highly specific assets are necessary when services involve specialized expertise, a high level of professional skills, and major investments and training. While studies generally support a relationship between asset specificity and internal sourcing in manufactured goods, Murray and Kotabe (1999) find that this relationship may not hold for supplementary services. A distinguishing characteristic of supplementary services is the concept of inseparability that refers to the difficulty for services performed away from the customers. Inseparability includes customer intimacy and close buyer–seller interactions. Murray and Kotabe (1999) also suggest that services that require highly specific investments have a greater likelihood of outsourcing, unless they are inseparable from the core product or service of the firm. Thus, to achieve the first objective of this research, the study examines whether minimizing the outsourcing of inseparable services with a strong customer interaction, while maximizing the outsourcing of services that influence the ability to support the customer in order management, invoicing, and payment (i.e., backroom services) increases a dealer's efficiency.

This research also draws on institutional theory and the concept of mimetic isomorphic behaviors to explain increasing trends toward outsourcing services as a response to uncertainty (DiMaggio & Powell, 1983). Comparing the process of the best performing organizations through benchmarking allows the management to learn which products, services, and processes would improve performance (Donthu, Hershberger, & Osmonbekov, 2005). However, some firms try to mimic other organizations identified as the best practice by industry associations and trade press, even though the efficiency of the strategy is unproved. Many industry benchmarks rely on ranking units by operational ratios (e.g., sales/employee) and financial ratios (e.g., net profit margin, return on assets) that may not be appropriate targets for all firms (White & Dieckman, 2005). According to a constrained-efficiency framework, strategies available for optimizing efficiency are limited to those deemed acceptable by the institutional environment (Roberts & Greenwood, 1997). Relying heavily on perceptions of successful strategies attributed to high-performers may detract from achieving a firm's goals. For example, Grewal, Comer, and Mehta (2001) find that firms fail to realize anticipated outcomes when making organizational decisions to adopt a strategy simply because of popular opinion. Manufacturer interest in dealer performance goes beyond the traditional metrics of sales volume and market share. An efficiency evaluation includes resource allocation, assortment mix, and financial ratios that can provide valuable information to managers. Thus, to achieve the second objective of this research, the study examines the efficiency assessment of dealers in comparison to the efficiency rankings with financial ratio benchmarking, while providing an approach to identify the best practices in an industry (Golany & Storbeck, 1999).