Managing clinical professionals in the face of an increasing competitive orientation: A study of USA hospitals

David D. Dobrzykowski
Department of Supply Chain Management and Marketing Sciences, Rutgers Business School, Rutgers University, 1 Washington Park, Rm 958, Newark, NJ 07102-3122, ddobrzykowski@business.rutgers.edu

Kathleen L. McFadden
Dept. of Operations Mgmt. & Info. Systems, College of Business, Barsema Hall 328, Northern Illinois University, DeKalb, IL 60115-2854, kmcfadden@niu.edu

Abstract
The competitive orientation of hospitals is increasing given industry changes. Capitalizing on a competitive orientation hinges on the effective management of clinical professionals. Our study posits that autonomy and motivation are key mediators capable of translating a competitive orientation into patient satisfaction. Data collected from USA hospitals provides useful insights.

Keywords
Professional Service Operations, Hospitals, Patient Satisfaction

Introduction
As the Operations Management (OM) field has evolved, researchers have increasingly recognized the challenging, yet critical role of customer satisfaction in contributing to the financial performance of a firm (Dobrzykowski et al., 2014). This is particularly thorny for professional service operations (PSOs) given their unique characteristics; high levels of process fluidity/flexibility, customer contact/service customization, and intensity of specialized labor (Wemmerlov, 1990; Silvestro et al., 1992; Schmenner, 1986, 2004; Lewis and Brown, 2012). Given their environment, PSOs manage value creation for customers by organizing professional service providers (PSPs) who have abstract expert knowledge and the ability to skillfully apply it in complex and customized cases (Goodale et al., 2008). As such, managerial approaches around gentle nudging, guiding, and persuading PSPs have prevailed over the use of firm standardized policies (Kellogg and Nie, 1995; Malhotra et al., 2006). Unfortunately, little is known about the efficacy of these types of operational approaches in services (Machuca et al., 2007) and many PSOs continue to produce disappointing results for their customers (Lewis and Brown, 2012).

The healthcare sector, specifically hospitals, provides a useful PSO context to examine these issues. Patient satisfaction has increased in importance as reimbursement methodologies shift away from volume-based systems to programs that link hospital revenues to outcomes that are valued by patients (Andritsos and Tang, 2014; Ding, 2014). As a result, hospitals have become more competitive and increased their focus on patient satisfaction (Salzarulo et al., 2011). Translating a competitive orientation into improved patient satisfaction is challenging for hospitals

given their substantial reliance on individual healthcare providers (e.g., physicians, nurses, technicians, etc.) for delivering services to patients (Dobrzykowski and Tarafdar, 2015). Healthcare delivery is a professional service characterized as "…complex, customized and reliant upon the knowledge and expertise of the server" (Heineke, 1995: p. 255). In this operational context, PSPs are important resources of the firm, and the way in which PSPs are managed plays a substantial role in delivering on a hospital's competitive orientation and achieving organizational goals such as patient satisfaction (Barney, 1991; Sirmon et al., 2007; Coltman and Devinney, 2013). Thus, the primary research objective of this study is to examine mediating factors which link a hospital's competitive orientation to financial performance; namely the roles of PSP autonomy, motivation and patient satisfaction (Malhotra et al., 2006).

However, hospitals may not be isomorphic in terms of their approaches to orchestrating resources (Bhakoo and Choi, 2013). As such, it is useful to examine the structural constraints facing organizations when considering their apparently idiosyncratic resource management approaches (Sirmon et al., 2007). In this study, we examine an important structural constraint; that of a hospital's teaching status (Dobrzykowski, 2012). In addition to treating patients, an important subset of hospitals maintain a teaching designation and engage in a mission related to education and research which may affect how PSPs respond to a hospital's orientation (Li and Benton, 2006). As such, a secondary research objective of this study is to examine the moderating effect of a hospital's teaching status on the mediating factors (PSP autonomy, motivation, and patient satisfaction) which link a hospital's competitive orientation to its financial performance.

Survey data were collected from 166 hospitals in the USA and paired with secondary data collected by the Centers for Medicare and Medicaid Services (CMS) and the American Hospital Directory. The study makes important contributions to the PSO, healthcare operations, and resource based theories literature, and provides useful guidance to hospital leaders.

Background and variables

A PSO is defined as "any organization which provides a service which is based on a professional diagnosis, i.e. on a thorough analysis by a qualified professional in a given field of facts or problems in order to gain understanding and guide future actions" (Harvey, 1989, p. 6). The PSO literature (Abbott, 1988; Goodale et al. 2008; Lewis and Brown, 2012) highlights the distinct environment required for managing PSO processes. Lewis and Brown, (2012) argue that PSOs have three distinctive characteristics; 1) high levels of customer contact/customization, 2) flexible processes with high labor intensity, and 3) an emphasis on "persuading" professional service providers rather than implementing standard operating procedures. Because of these characteristics, PSOs share common challenges that apply to healthcare.

Flexible processes with high labor intensity

It is generally understood the PSO processes are labor intensive and often require a high degree of employee judgment in delivering the service. Therefore, PSOs must concentrate their effort on personnel issues, specifically related to hiring, training, motivating and empowering the work force to remain competitive (Schmenner, 1986). This characteristic also leads to greater process variation and slower throughput times (Schmenner, 2004).

High level of customer contact/customization

Since customer contact is high in PSOs, customers play a critical role in the service process. In fact, customers are often described as co-producing the service (Chase and Tansik, 1983;

Fitzsimmons and Fitzsimmons 2014). This is achieved any time the customer offers input into the service process. It is often said that customers of PSOs work together with the service provider to define, produce and deliver the service. Schmenner (1986) argues that due to this high level of customer input and customization, it is difficult to implement standard operating procedures, automation, or service routine. Since PSO's have a high degree of employee/customer interaction and customization of services, managers face challenges related to managing a flat hierarchy with loose subordinate-supervisor relationships (Schmenner, 1986).

Emphasis on "persuading" professional service providers

PSPs have extensive knowledge and are often considered experts in their field. Professional services in healthcare offer special challenges because medical professionals are trained in clinical services but may not have knowledge of business management. These PSPs are typically members of professional organizations and require continuing education within their area of specialty. The methods employed by PSPs may be influenced by knowledge monopolies (Lewis and Brown, 2012) that serve as external controls that can minimize the influence of managers. In a PSO like a hospital, many of the employees are professionals and because of the way PSOs function, PSPs exhort much more power over the organization than employees in other types of organizations (Harvey, 1990). Consequently, Malhotra et al. (2006, p. 175) argues that PSPs may be best managed by "guiding, nudging, and persuading" as opposed to imposing tight controls. Given the considerable discretion granted PSPs in the performance of their duties, it can be said that they have a great deal of autonomy.

Autonomy addresses the degree to which all employees of a firm enjoy freedom to bring forth new vision or ideas and follow it through to completion (Jambulingam et al., 2005). Given healthcare professionals' high level of expert knowledge and specialized advanced training, autonomy is a particularly important motivator for these PSPs. Motivation is defined as the extent to which those involved in healthcare delivery enhance each other's morality and attitudes about work, encouraging hard work and high level job performance (Jambulingam et al., 2005). Favorable attitudes about and morale of hard work contributes to their motivation to produce high level job performance (Jambulingam et al., 2005). Professionals are supposed to serve the patient within the organization's orientation (Harvey, 1990). Thus, autonomy and motivation should represent important factors linking a competitive orientation to improved patient satisfaction and ultimately net income.

Competitive Orientation and the Service Encounter Triad

Organizational orientation is the fundamental tacit set of assumptions about the world and organization that a group of people share and that determines their thoughts, perceptions, feelings, and their outward-facing behaviors (Schein, 1996; Roh et al., 2008). When considering operations, orientations can be unique to a firm (Min and Mentzer, 2004) and should be contextually specific to the firm's situation (Roh et al., 2008). Orientations are evident in the various behavior patterns of firms and show differences in terms of focus, the management of employees, criteria for success, criteria for effectiveness, and organizational glue (Cameron and Quinn, 1999). Roh et al. (2008: p. 365) point out that ". . . these patterns of culture are not mutually exclusive (Al-Khalifa and Aspinwall, 2001). In other words, no organization exhibits only one cultural pattern. As such, hospitals may simultaneously possess multiple orientations such as those related to safety, quality, or financial performance (See Tucker et al., 2007; McFadden et al., 2009; and Boyer et al., 2012).

The focus of a firm is a strategic orientation that involves the way in which the firm commits and controls resources, including how it forms networks relationships (Kuratko and Hornsby, 2009).

Over the last several decades, professional service organizations have focused on the strategic issues of managing the service delivery process (Heinke and Davis, 2007). Key to this effort has been the importance of competitiveness within services and its relationship to managing human resources. Schlesinger and Heskett (1991) and Schneider and Bowen (1995) both published books offering competitive strategies for winning customers. In their books they stress that people (employees, customers, managers) are the key to success in services. Hospital organizations are recognizing the importance of focusing on a competitive orientation to enhance financial performance. Competitive orientation is defined as a rigorous effort to outperform industry rivals (Lumpkin and Dess 1996; Dess, 2005). It can be characterized as an attempt to improve market position by effectively assessing the external environment and aggressively responding to information about the competitor's capabilities.

An important framework that captures the relationship between the organization, customers, and contact personnel is called the service encounter triad (see Cook et al. 2002). Harvey (1990) applied this model to PSOs and replaced organization, customers and contact personnel with the terms "management power," "client power" and "professional power" respectively. The framework illustrates how the three parties have different objectives or desires within the encounter and these objectives are often conflicting. Each participant in the service encounter attempts to exert control over the transaction. For example, managers of the service organizations want to be competitive and achieve high financial return; the customer (client) wants satisfaction and value; and the contact personnel (professional) want autonomy. The contact personnel and customers both vie for control over the service process that is typically formed by the service organization (Bateson, 1983; Cook et al. 2002). An important factor that impacts which objective takes precedence is often based on the distribution of power among the parties (Harvey, 1990). However, all three parties mutually benefit when the encounter is balanced, meaning that none of the players dominate the encounter.

In this study, the service organization is the hospital, the contact personnel are the PSPs, and customers are called patients. While manufacturing organizations pursuing a competitive orientation may standardize processes and impose strict operating procedures onto workers, the literature outlined above would argue that PSOs need to take a different approach (Lewis and Brown, 2012). Insights from the service encounter triad framework would suggest that to avoid a dysfunctional service encounter, organizations should instead focus on increasing autonomy (Cook et al. 2002). From the patients' perspective, much of their frustration occurs when PSPs do not have the autonomy to solve their problems. Many scholars argue that competitive orientation and autonomy are linked, and result in positive performance outcomes (Lumpkin et al. 2009). The freedom given to individuals or teams to exercise creativity and personal judgment is needed in a competitive environment (Lumpkin and Dess, 1996). Moreover, if PSP's are expected to operate in a very tightly restricted environment, motivation on the job has been reported to diminish (Lumpkin et al. 2009).

Theory and hypotheses

Resource-based theories suggest that a firm's aptitude to create and appropriate value results from differences in the resources possessed by competing firms (Barney, 1991), as well as managerial decisions regarding the 'orchestration' of these resources (Sirmon et al., 2007; 2011). Resource Dependency Theory (RDT) has been used to explain managerial decisions aimed at reducing

environmental uncertainty and dependence (Pfeffer and Salancik, 1978). In healthcare, RDT has been beneficial in understanding changes in payment systems, regulatory demands, and uncertainties regarding the external dependencies as present in the extant healthcare strategic planning literature (Shortell et al., 1990; Swayne et al., 2006). "Intuitively, the hospital sector is expected to be highly externally oriented as it faces a rapidly changing and demanding environment of regulation and payment changes," (Kash et al., 2014: p. 253). In the context of our study, we would expect that as reimbursement methodologies shift to reward desirable patient outcomes, hospitals will increasingly respond by developing competitive orientations centered on delivering value to patients (Bennett, 2012; Dobrzykowski and Tarafdar, 2015).

While RDT is useful in understanding why a hospital develops a competitive orientation in response to environmental changes, it falls short of explaining the translation of such an orientation into performance results for the hospital. For this, we turn to the resource based view (RBV) of the firm which focuses on the notion that competitive advantage is based on the internal resources a hospital develops or hires in order to translate the organization's orientation into desirable outcomes (Priem and Butler, 2001; Wernerfelt, 1984). While RBV is well established in the strategic management and OM literature, it has only recently emerged as a means of explaining resource decisions in healthcare settings (Huesch, 2013; Kash et al., 2014).

Together, RDT and RBV explain why hospitals are increasingly developing a more competitive orientation and how hospital-specific approaches to orchestrating their human resources (PSPs) is key to achieving improvements in patient satisfaction and ultimately net income (Sirmon et al., 2007). This is consistent with the literature dealing with the service encounter triad, indicating that one would expect that competitive orientation would be positively linked to autonomy; that autonomy would be positively associated with employee motivation, resulting in higher customer satisfaction and ultimately higher net income. Thus, we test the following hypotheses. See Figure 1.

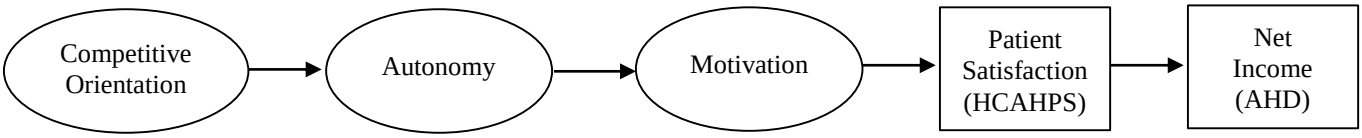

Figure 1 – Research model.

H1: Competitive Orientation is positive associated with PSP Autonomy.
H2: PSP Autonomy is positively associated with PSP Motivation.
H3: PSP Motivation is positively associated with Patient Satisfaction.
H4: Patient Satisfaction is positively associated with Net Income.

With regard to teaching hospitals, owing to their mission, teaching hospitals are posited to engage in more innovative, state-of-the-art 'best practices' in treating patients (Goldstein and Naor, 2005; McFadden et al., 2009). However, this teaching mission also results in higher turnover of PSPs as students (e.g., medical students, residents, advance practice nurses, technologists, etc.) complete their training and leave for permanent positions (Theokary and Ren, 2011). Thus, while healthcare professionals often feel a high degree of loyalty to their profession, it is reasonable that this phenomenon is exacerbated in teaching hospitals (Fredendall et al., 2009; Nembhard et al., 2009). These factors ought to influence the response of PSPs to the orientation of the hospital, and

influence the mediated pathways from competitive orientation (involving autonomy and motivation) to patient satisfaction.

H5: A hospital's status as a teaching hospital will moderate H1, H2, H3, and H4.

Methods

Instrument development and measures

Data were collected from three sources and a matched sample dataset was developed. Competitive Orientation, Autonomy and Motivation are multi-dimensional psychometric measures collected via survey. These are all hospital phenomena which are behavioral in nature and thus appropriate to capture these variables using psychometric approaches (Dobrzykowski and Tarafdar, 2015). Literature review and academic and practitioner field interviews generated and validated items for reliable measurement properties. The initial items entering the Q-sort pilot test are rooted in literature from Lumpkin and Dess (1996) and Jambulingam et al., (2005). Six healthcare professionals with significant hospital-based experience were selected and participated as judges in the Q-sort process (Churchill, 1979). The study-related domain knowledge of the judges was confirmed by the researcher and is evidenced in their job titles which include: President of Physician Services and Clinical Integration, Ambulatory Medical Information Officer, Service Line Vice President, Clinical Director and Department Chair, Regional Manager of Physician Relations, and Manager of Care Coordination/Black Belt. Three of the Q-sort judges were Physicians (Medical Doctors – MDs) and all of the judges possessed prior clinical academic training.

Structured interviews were conducted in three rounds containing two judges each. The structured interviews began with the researcher providing the research model and a standard set of instructions to the judges. Envelopes labeled with construct definitions were then provided to the judges along with randomized index cards, each labeled with a specific candidate scale item. Each judge was then asked to organize the cards in construct categories, creating a grouping of cards for each construct. A category of "not applicable" was also provided to the participating judge. The researcher was available to answer procedurally oriented questions, therefore the judges understanding was confirmed throughout the process to ensure outcome accuracy.

Upon the completion of each Q-sort exercise, inconsistencies between the judge's item placement and the researcher's expectations were identified and discussed. Judges were asked to provide their reasoning for these placements as well as for feedback capable of clarifying ambiguous items. A thorough analysis was then conducted following each round to evaluate and decide the disposition of ambiguous items. Consequently, items were revised, deleted, combined and disentangled when double-barreled in nature. This process ensured construct validity, and identified any items or combination of items that were considered ambiguous or possessed 'different shades of meaning' by the respondent (Churchill, 1979). Convergent and discriminant validity were assessed using three methods of inter-rater reliability; inter-judge raw agreement, placement ratio, and Cohen's Kappa (Moore and Benbasat, 1991). The Q-sort pilot testing produced strong evidence of convergent and discriminant validity throughout the process with final results of raw agreement - 94.0%, overall placement ratio - 96.6%, and Kappa score - 93.6%. The judges also provided feedback supporting the relevance of the study and the appropriateness of the target respondents' domain knowledge.

Patient Satisfaction is a single-item measure, generated from the CMS HCAHPS survey. CMS annually reports on patient satisfaction via data collected from patients and makes its report publically available. Net income is reported as a percentage by the American Hospital Directory

(AHD) which is a publically available data source providing financial performance data for more than 6,000 hospitals in the USA. AHD data is derived from both public and private sources, including the Federal Centers for Medicare and Medicaid Services. Smith et al. (2013) is a related study that has analyzed AHD net income data.

Dataset development and characteristics

The dataset was populated by a cross-sectional self-administered internet-based survey. The sample frame was created from a random list of acute care facilities that are members of the American Hospital Association. A telephone solicitation method was employed to populate the sample frame with email addresses of prospective respondents (see McFadden et al., 2009). The sample frame consisted of 644 acute care facilities. 302 responses were received, generating a response rate of 46.8% (302/644).

While the favorable response rate supports generalizability of findings from this study (McFadden et al., 2009), two statistical tests were conducted to assess non-response bias (Armstrong & Overton, 1977): t-tests (Swafford et al., 2006) and the chi-square test (Meyer & Collier, 2001). A t-test examined mean differences for bed size, similar to Meyer & Collier (2001). Chi-square tests were performed on dichotomous binary variables for hospital type (tertiary, community, or critical access) as well as for membership in a hospital system. 124 hospitals declined to participate in the survey and were designated as non-respondents. Non-respondent data for hospital type was gathered through internet research while data for bed size and system affiliation membership was provided from the AHA. These tests produced no statistically significant differences between the respondents and non-respondents, providing evidence of an absence of non-response bias (Armstrong & Overton, 1977).

Of the survey hospitals, 166 provided identifying information and were matched with CMS and ADH data. As such, this study analyzes a dyadic sample collected from three sources. Hospitals report on their Competitive Orientation, Autonomy, and Motivation. CMS reports on patient satisfaction from patient surveys, and hospitals report net income to AHD through the CMS Medicare Cost report. A list of items will be presented at the conference along with the distribution of respondents and hospital characteristics.

Analysis and results

Co-variance based Structural Equation Modeling in AMOS was used to examine the convergent and discriminant validity of variables in a confirmatory factor analysis. Measurement and structural model analyses produced acceptable results and will be presented at the conference. The structural model results for the entire sample appears in Figure 2. Direct and indirect effects as well as the results for teaching and non-teaching hospitals will be presented at the conference.

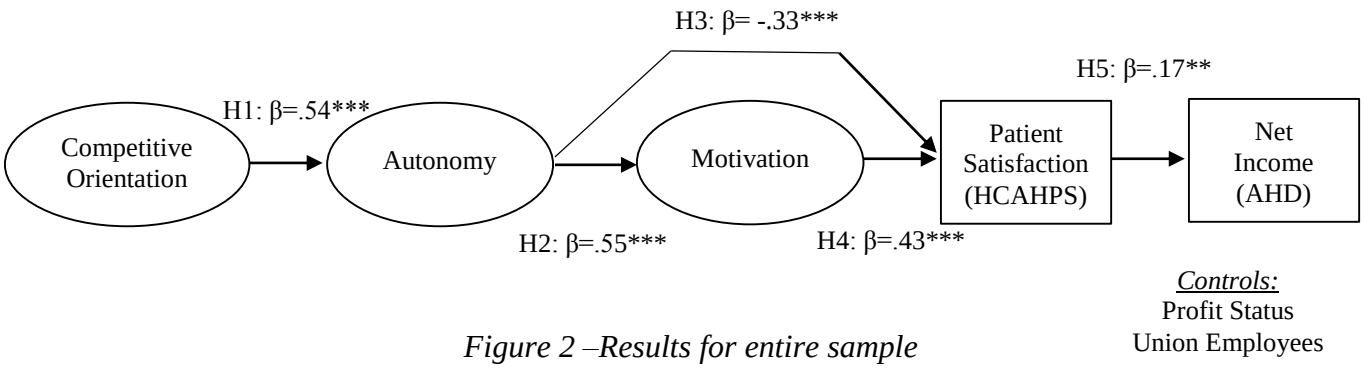

Figure 2 –Results for entire sample

Discussion

The results reveal that a hospital's competitive orientation motivates PSP autonomy which in turn positively influences PSP motivation, but negatively affects patient satisfaction. The negative effect of autonomy on patient satisfaction is offset by the positive influence of motivation on patient satisfaction. To our knowledge, this is the first study to unpack the role of PSP autonomy by revealing its negative direct effect, as well as its positive indirect effect on patient satisfaction partially mediated by PSP motivation. Patient satisfaction drives hospital net income. Additionally, competitive orientation has no relationship with patient satisfaction, other than in influencing autonomy, emphasizing the key role of PSP autonomy in healthcare delivery that results in high patient satisfaction.

Next, results from two bifurcated sub-samples containing teaching and non-teaching hospitals, reveal that the negative direct effect of autonomy on patient satisfaction is not present in teaching hospitals. Instead, in teaching hospitals, competitive orientation influences autonomy, which in turn drives motivation, which effects patient satisfaction. In non-teaching hospitals, competitive orientation positively influences both autonomy and motivation; autonomy leads to motivation and negatively influences patient satisfaction. PSP Motivation positively influences patient satisfaction. The results indicate that PSP in teaching hospitals may indeed provide care to patients in a more homogeneous fashion employing 'best practices' endorsed by the profession. Autonomy appears to have a greater influence in motivating PSPs in teaching hospitals indicating that they respond to autonomy. In non-teaching hospitals, PSPs may be less oriented to their professional societies resulting in increased heterogeneity in practice motivated by a heightened sense of autonomy. Thus, in non-teaching hospitals the role of motivation increases in importance in healthcare delivery resulting in high patient satisfaction. In either case, competitive orientation is shown as a key antecedent. When considering net income, non-teaching hospitals also appear to struggle to translate patient satisfaction into increased financial performance. Additional insights will be provided at the conference.

Bibliography

Abbott, A. 1988. *The System of Professions: An Essay on the Division of Expert Labor*. University of Chicago Press. Illinois

Al-Khalifa, K., E. Aspinwall. 2001. Using the competing values framework to investigate the culture of Qatar industries. *Total Quality Management*, **12**(4): 417-28.

Andritsos, D.A. , C.S. Tang. 2014. Linking Process Quality and Resource Usage: An Empirical Analysis. *Production and Operations Management* **23** (12): 2163-2177.

Armstrong, J.S., T.S. Overton. 1977. Estimating non-response bias in mail surveys. *Journal of Marketing Research* **24**: 396-402.

Barney, J.B. 1991. Firm resources and sustained competitive advantage. *Journal of Management* **17**(1): 19–120.

Bateson, J. E. 1983. *Perceived Control and the Service Encounter*. London Business School.

Bennett, A. 2012. Accountable care organizations: Principles and implications for hospital administrators. *Journal of Healthcare Management* **57**(4): 244-254.

Bhakoo, V., T. Choi. 2013. The iron cage exposed: Institutional pressures and heterogeneity across the healthcare supply chain. *Journal of Operations Management* **31**: 432-449.

Boyer, K.K., Gardner, J.W., S. Schweikhart. 2012. Process quality improvement: An examination of general vs. outcome-specific climate and practices in hospitals. *Journal of Operations Management* **30**: 325-339.

Cameron, K., R. Quinn. 1999. *Diagnosing and Changing Organizational Culture.* Addison-Wesley, Reading, MA.

Chase, R.B., D.A. Tansik. 1983. The customer contact model for organization design. *Management Science* **29**(9): 1037-50.

Churchill Jr., G.A. 1979. A paradigm for developing better measures of marketing constructs. *Journal of Marketing Research* **16**(February): 64–73.

Coltman, T., T.M. Devinney. 2013. Modeling the operational capabilities for customized and commoditized services. *Journal of Operations Management* 31, 555-566.
Cook, L. S., Bowen, D. E., Chase, R. B., Dasu, S., Stewart, D. M., D.A. Tansik. 2002. Human issues in service design. *Journal of Operations Management*, **20**(2): 159-174.
Dess, G. G., G.T. Lumpkin. 2005. The role of entrepreneurial orientation in stimulating effective corporate entrepreneurship. *The Academy of Management Executive*, **19**(1): 147-156.
Ding, D.X. 2014. The effect of experience, ownership, and focus on productive efficiency: A longitudinal study of U.S. hospitals. *Journal of Operations Management* **32**: 1-14.
Dobrzykowski, D.D., M. Tarafdar. 2015. Understanding information exchange in healthcare operations: Evidence from hospitals and patients. *Journal of Operations Management* In Press.
Dobrzykowski, D., V. Saboori Deilami, P. Hong, S.C. Kim. 2014. A structured analysis of operations and supply chain management research in healthcare (1982–2011). *International Journal of Production Economics* **147**: 514-530.
Dobrzykowski, D.D. 2012. Examining Heterogeneous Patterns of Electronic Health Records Use: A Contingency Perspective and Assessment. *International Journal of Healthcare Information Systems and Informatics* **7**(2): 1-16.
Fredendall, L. D.,J.B. Craig, P.J. Fowler, U. Damali. 2009. Barriers to swift, even flow in the internal supply chain of perioperative surgical services department: A case study. *Decision Sciences Journal* **40**(2): 327-349.
Goldstein, S.M., M. Naor. 2005. Linking publicness to operations management practices: a study of quality management practices in hospitals. *Journal of Operations Management* **23**: 209-228.
Goodale, J. C., D.F. Kuratko, J.S. Hornsby. 2008. Influence factors for operational control and compensation in professional service firms. *Journal of Operations Management* **26**(5): 669-688.
Jambulingam, T. R. Kathuria, W. Doucette. 2005. Entrepreneurial orientation as a basis for classification within a service industry: the case of retail pharmacy industry. *Journal of Operations Management,* **23**: 23-42.
Fitzsimmons, J. A., M.J. Fitzsimmons, S. Bordoloi. 2014. *Service Management: Operations, Strategy, and Information Technology*. Eight Edition, McGraw-Hill.
Harvey, J., 1990. Operations management in professional service organisations: a typology. *International Journal of Operations and Production Management* **12**(4): 5–15.
Heineke, J. 1995. Strategic operations management decisions and professional performance in US HMOs. *Journal of Operations Management* **13**(4): 255-272.
Heineke, J., M.M. Davis. 2007. The emergence of service operations management as an academic discipline. *Journal of Operations Management*, **25**(2): 364-374.
Huesch, M.D. 2013. Are there always synergies between productive resources and resource deployment capabilities? *Strategic Management Journal*, 34(11): 1288-1313.
Kash, B.A., A. Spaulding, L.D. Gamm, C.E. Johnson. 2014. Healthcare strategic management and the resource based view. *Journal of Strategy and Management* **7**(3): 251-264.
Kellogg, D.L., W. Nie. 1995. A framework for strategic service management. *Journal of Operations Management* **13**: 323–337.
Kuratko, D.F. J.S. Hornsby. 2009. *New Venture Management: The Entrepreneur's Roadmap.* Pearson Prentice Hall; Upper Saddle River, New Jersey.
Lewis, M. A., A.D. Brown. 2012. How different is professional service operations management. *Journal of Operations Management* **30**(1): 1-11.
Li, L., W.C. Benton. 2006. Hospital technology and nurse staffing management decisions. *Journal of Operations Management* **24**: 676-691.
Lumpkin, G.T., G.G. Dess. 1996. Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review* **21**(1): 135–172.
Lumpkin, G. T., C.C. Cogliser, D.R. Schneider. 2009. Understanding and measuring autonomy: An entrepreneurial orientation perspective. *Entrepreneurship Theory and Practice*, **33**(1): 47-69.
Meyer, S. M., D.A. Collier. 2001. An empirical test of the causal relationships in the Baldrige Health Care Pilot Criteria. *Journal of Operations Management* **19**(4): 403-426.
Machuca, J., M.D.M. Gonzalez-Zamora, V.G. Aguilar-Escobar. 2007. Service operations management research. *Journal of Operations Management* **25**: 585–603.
Malhotra, N., T. Morris, C.R. Hinings. 2006. Variations in organizational form among professional service organizations. In: Greenwood, R., Suddaby, R. (Eds.), *Research in the Sociology of Organizations: Professional Service Firms*, Vol. 26. Elsevier, Amsterdam, Netherlands.
Makadok, R. 2001. Toward a synthesis of the resource-based view and dynamic-capability views of rent creation.

Strategic Management Journal ***22***(5): 387–401.
McFadden, K.L., S.C. Henagan, C.R. Gowen III. 2009. The patient safety chain: Transformational leadership's effect on patient safety culture, initiatives, and outcomes. *Journal of Operations Management* **27**: 390-404.
Mentzer, J. M., S.H. Min, Z.G. Zacharia. 2000. The nature of interim partnering in supply chain management. *Journal of Retailing* **76**: 549–568.
Moore, G.C., I. Benbasat. 1991. Development of an instrument to measure the perceptions of adopting an information technology innovation. *Information Systems Research* **2**(3): 192-222.
Nembhard, I.M., J.T.H. Alexander, R. Ramanujam. 2009. Why does the quality of health care continue to lag? Insights from management research. *Academy of Management Perspectives* **23**(1): 24-42.
Pfeffer, J. G.R. Salancik. 1978. The External Control of Organizations: A Resource Dependence Perspective, Harper & Row, New York, NY.
Priem, R. L., J.E. Butler. 2001. Is the resource-based "view" a useful perspective for strategic management research? *Academy of Management Review*, **26**(1): 22-40.
Roh, J., P. Hong, Y. Park. 2008. Organizational culture and supply chain strategy: a framework for effective information flows. *Journal of Enterprising Information*, **21**(4): 361-376.
Salzarulo, P.A., K.M. Bretthauer, M.J. Cote, K.L. Schultz. 2011. Impact of Variability and Patient Information on Health Care System Performance. *Production and Operations Management* **20**(6), 848–859.
Schein, E.H. 1996. Three cultures of management: the key to organizational learning, *Sloan Management Review* **38**(1): 9-20.
Schlesinger, L. A., J.L. Heskett. 1991. *The Service-Driven Service Company*. Harvard Business Review, Boston.
Schmenner, R. 1986. How can businesses survive and prosper? *Sloan Management Review* Spring, 21–32.
Schmenner, R.W. 2004. Service businesses and productivity. *Decision Sciences* Journal **35** (3): 333–347.
Schneider, B., D.E. Bowen. 1995. *Winning the Service Game*, Harvard Business School Press, Boston .
Shortell, S.M., E.M. Morrison, B. Friedman. 1990. *Strategic Choices for America's Hospitals: Managing Change in Turbulent Times*, Jossey-Bass, San Francisco.
Silvestro, R., L. Fitzgerald, R. Johnston, C. Voss. 1992. Towards a classification of service processes. *International Journal of Service Industry Management* **3**(3): 62–75.
Sirmon, D.G., M.A. Hitt, D.R. Ireland, B.A. Gilbert. 2007. Managing firm resources in dynamic environments to create value. *Academy of Management Review* **32**(1): 273–292.
Sirmon, D.G., M.A. Hitt, D.R. Ireland, B.A. Gilbert. 2011. Resource orchestration to create competitive advantage: breadth, depth, and life cycle effects. *Journal of Management* **37**(5): 1390–1412.
Smith, A.L., R.V. Bradley, B.C. Bichescu, M.C. Tremblay. 2013. IT governance characteristics: electronic medical records sophistication, and financial performance in U.S. hospitals: An empirical investigation. *Decision Science Journal*, **44**(3): 483-516.
Swafford, P., S. Ghosh, N. Murthy. 2006. The antecedents of supply chain agility of a firm: Scale development and model testing. *Journal of Operation Management* **24**(2): 170-188.
Swayne, L.E., W.J. Duncan, P.M. Ginter. 2006, *Strategic Management of Health Care Organizations*, Blackwell, Malden.
Theokary, C., Z.J. Ren. 2011. An empirical study of the relations between hospital volume, teaching status, and service quality. *Production and Operations Management* **20**(3): 303-318.
Tucker, A., 2004. The impact of operational failures on hospital nurses and their patients. *Journal of Operations Management* **22**: 151-169.
Wemmerlov, U. 1990. A taxonomy for service processes and its implications for system design. *International Journal of Service Industry Management* **1**(3), 13–27.
Wernerfelt, B. 1984. A resource based view of the firm. *Strategic Management Journal* **5**: 171-180.