

## **Strategies to Implement Efficient Closing Cycles**

A doctoral study completed for Walden University

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### **Abstract**

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*Many financial leaders lack strategies to make the timely fiscal reporting needed for business to obtain profitability, competitive advantage, and sustainability. The purpose of this single case study was to explore successful strategies used to complete efficient closing cycles to evaluate performance and support business decisions. The conceptual framework for this study was process improvement and the theory of constraints. Data were collected from semistructured interviews with 5 purposively selected leaders; data were supplemented with information from the organization's website and print materials. Financial leaders who had developed successful strategies to complete timely financial statements were selected to participate in the study from a U.S. healthcare organization. Data were analyzed using Yin's 5-step approach, which included examining, categorizing, tabulating, creating a data display, and testing the data. Transcript review validated that emerging themes were in alignment with participant experiences. Four major themes emerged from data analysis: provide training and professional development, promote teamwork, engage in effective communication, and use information technology. Social change implications include potential process improvement in hospitals that could provide insight into specific system processes that contribute to the rising cost of global healthcare. Financial leaders achieving increased profitability through process improvement could enable administrators to make financial contributions to their communities, expand to new markets, and create new employment opportunities.*

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**Keywords:** Financial Reporting, Health Economics, Process Improvement, Theory of Constraints, US Healthcare System, Hospitals, Strategic Business Decisions.

**JEL Classification:** A10, B26, D03, D21, D40, D63, D78, G40, G50, H00, H41, H42, H44, H51, I11, I14, I15, I18, L22, L32, L89, M15, M21, M41, M48

### **1. Introduction**

Debates over the future of the healthcare system will likely include provisions aimed toward the value of the government-funded Medicare and Medicaid programs and mandates for nonprofit hospitals to assess community healthcare needs (Buehler, Snyder, Freeman, Carson, & Ortega, 2018). The idiosyncratic hospital market first began its complex changes after for-profit hospitals entered the market. After establishing the Federation of American Hospitals in 1960 to represent their interests in Washington, D.C., for-profit hospital leaders established a large and stable market niche, with dominant positions in certain Sunbelt markets (Meyer, 2016). The healthcare landscape changed, shifting from a primarily social public good to a business commodity (Cannon, Lamboy-Ruiz, & Watanabe, 2018). Characteristics of pure nonprofits include providing public service, special tax exemptions, use of volunteers, charitable contributions and grants, the motivation of multiple factors beyond the bottom-line performance measure, and potential for bankruptcy (Cannon et al., 2018; Deber, 2002).

For-profit hospitals and nonprofit hospitals compete directly in the hospital market, and their operational characteristics in the market appear polar opposite; yet, in the dynamic hospital sector, there are for-profit hospitals that claim tax-exempt status (Cannon et al., 2018; Deber, 2002). Historically, general classification of a for-profit hospital included the leaders' focus on profit maximization, whereas nonprofit leaders seek to break even (Cannon et al., 2018). However, the differences between for-profit and nonprofit hospitals are becoming harder to determine. Although there is changing complexity within the definition of profit versus the tax status, hospital stakeholders expect a return on investment (ROI), which occurs through financial reporting to stakeholders (L. W. Burns, et al., 2015; Cannon et al., 2018; Dubrovinsky & Winter, 2015). Stakeholders of nonprofit hospitals do not expect earnings because the primary focus of nonprofit hospitals is to provide a public service (Cannon et al., 2018; Deber, 2002).

Although there are complexities in the definition of what is nonprofit and for-profit, evaluation of successful hospitals, regardless of tax status, includes delivered services, stakeholders who use the services, the impact of the services, the mix of resources used to provide the services, and the fiscal bottom line (Deber, 2002). Further complexity occurs from the government interventions, with laws and subsidies to encourage hospitals to provide lower cost and increased quality of care contributing to idiosyncratic market behavior of for-profit and nonprofit hospitals (Barnes & Harp, 2018). To address the healthcare system environment, there are three areas that need ongoing assessment: composition of the healthcare population, measurement of health and health risks within the population assessment, and use of knowledge gained to drive future healthcare reforms (Buehler et al., 2018).

Within the hospital segment, there are three identified classifications: private nonprofit, investor owned systems, and total investor owned (Sloan & Vraciu, 1973). Although publicly traded hospital leaders, both nonprofit and for-profit, seek a ROI regardless of tax status (Dubrovinsky & Winter, 2015). Delays in the financial reporting within hospitals influence all stakeholders and reduce competitive advantages due to the lack of timely information needed for decision-making (Chukmaitov, Harless, Bazzoli, & Muhlestein, 2019).

## **2. Background of the Problem**

Organizational success includes measures of financial performance (Hutabarat & Flora, 2015). Financial performance reports relay information about the economic health of the organization, specifically how the leaders are managing and controlling the organization's resources (Hutabarat & Flora, 2015). Financial statements are the financial analysis tools used by organizational leaders to evaluate the organization's core financial performance measure: profitability (Satwinder, Darwish, & Potočnik, 2016).

Financial leaders analyze the financial statements to determine the economic position of an organization (Huang, Dao, & Sun, 2017). Organization leaders rely on the financial analysis of the economic position of the organization to make strategic business decisions (Satwinder et al., 2016). However, the lack of timeliness of the financial data could lead to poor decisions and missed opportunities, resulting in loss of profit margins (Sridharan, 2015). Process improvement (PI) practices can refine the financial close process by eliminating bottlenecks in the accounting cycle that lead to the delay in the presentation of financial data analysis (Pretorius, 2014; Sims & Wan, 2017). Organizations that implement successful PI can achieve increased ROI by understanding the transformative system process of the structural factors of PI: leadership, culture, change, and training (Heavey, Ledwith, & Murphy, 2014).

### **2.1 Problem Declaration**

Stakeholders miss analytic opportunities and lose confidence in data quality when organizations miss financial reporting deadlines (Huang et al., 2017; Javrin & Mascha, 2014; Rihter, Zivkov, & Nerandzic, 2017). Forty-nine percent of leaders attribute the approximate 70-day reporting delay to inefficient operational accounting procedures (Bartov & Konchitchki, 2017). The general business problem was that financial leaders in hospitals face pressure to produce high-quality financial information faster and more efficiently. The specific business problem was that some hospital financial leaders lack strategies to implement efficient closing cycles to evaluate performance and support business decisions.

### **2.2 Overarching Purpose**

The purpose of this qualitative, single case study was to explore successful strategies used to complete efficient closing cycles to evaluate performance and support business decisions. The target population for this study was hospitals in which business leaders engage in PI. The geographic location was in the southern region of the west south-central United States.

The results of this study could contribute to social change by providing financial leaders with information on strategies to improve financial reporting as well as enable administrators to make financial contributions to their communities, expand to new markets, and create new employment opportunities.

### 2.3 Nature of the Study

Researchers use three types of research methods: quantitative, qualitative, and mixed method (McCusker & Gunaydin, 2015). The goal of this study was to explore how financial leaders can make more efficient, effective, and strategic business decisions; therefore, a qualitative case study was most appropriate as described by Yap and Webber (2015). A quantitative research approach was not suitable because the goal of this study was not to test hypotheses or determine if there was a correlation between explicitly defined variables as described by McCusker and Gunaydin (2015). A mixed-method approach was not appropriate because the goal of the study was not to triangulate data both quantitatively and qualitatively as (see Yap and Webber, 2015).

In this study, I employed a single case study design. A case study design was appropriate because the goal of the study was to explore a distinct system and process (see Yin, 2018). The single case study is the most applicable design for exploration of specific, multifaceted events in the real-world environment (Manolov & Moeyaert, 2017). Alternative qualitative designs were not suitable for the study because the goal of this study was not to focus on phenomenological design or the life experiences through the perception of the individuals (see A. Harrison, Burrell, Velasquez, & Schreiner, 2017). Additionally, neither ethnographic nor grounded theory was appropriate for this study. Ethnographic researchers seek to explore the shared patterns of a cultural phenomenon (Van Maanen & de Rond, 2017), which was not the intent of this study. The focus of grounded theory is on the building of theory via empirical analysis (Charmaz, 2017), which was not the goal of this study.

## 3. Research Question

The central research question in this qualitative single case study was: What strategies do hospital financial leaders use to implement efficient closing cycles to evaluate performance and support business decisions?

### 3.1 Interview Questions

I asked the following open-ended questions in a semistructured interview to allow the participants to explain their in-depth familiarities with the PI phenomenon while still complying with timely financial reporting:

What role do you play in the financial close process?

Which of the challenges or constraints, if any, does your organization face to ensure timely financial closure: leadership, culture, change, or training?

What are the leadership's organizational goals regarding timely financial data reporting?

What information technology (IT) issues influence timely reporting?

What type of training is provided on operational processes to meet reporting deadlines have you received?

What strategies does your organization use to deal with any of these challenges (i.e., leadership, culture, change, or training) to complete the financial process efficiently?

How do you determine your company's performance?

What other strategies do you use to complete the financial close process efficiently and promptly?

## 4. Conceptual Framework

The framework of the study comprised the theory of constraints (TOC) and PI. Developed by Goldratt in 1980, the TOC framework includes the belief that leaders fail to reach organization goals due to constraints within the organization (Goldratt & Cox, 2004). The underlying philosophy of the TOC is the removal of performance constraints using a systems approach to ensure PI (Sims & Wan, 2017). When organizational leadership implement systems change in the mindset of the business unit, measures that drive business, and methods employed in the business unit, PI occurs within the organization (Goldratt, 1990). Constructs in the TOC include thinking processes to identify problems, strategies to solve problems, and implementation of strategy to facilitate change (Goldratt, 1990).

The TOC and PI frameworks contain systematic steps that allow for the identification of the system constraint, exploitation of the system constraint, subordination of elements of the constraint, elevation of the system constraint, and continuation of the system analysis (Pretorius, 2014). Failures within the implementation of PI arise when organizational leaders do not know how to eliminate constraints within the leadership, culture, human capital, strategic management, process methodology, and performance management (Laureani & Antony, 2012).

Therefore, the TOC and PI frameworks were appropriate to investigate the applied business problem of operational processes that contribute to improved measurement of performance, timely financial information release, and overall quality leading to more effective business decisions.

## **5. Operational Definitions**

Big data: The three Vs of high volume, high velocity, or high variety information (Janvrin & Watson, 2017).

For-profit hospitals: Investor owned hospitals operated for efficiency, specifically ROI to shareholders (Pracht, Langland-Orban, & Ryan, 2018; Sloan & Vraciu, 1973).

## **6. Assumptions, Limitations, and Delimitations**

### **6.1 Assumptions**

Assumptions are the explicit statements of beliefs and expectations (Kirkwood & Price, 2013). Listings of conventions establish the precision of the inquiry due to the lack of empirical evidence (Kirkwood & Price, 2013). The first assumption in this study was that the participants relayed honest and precise information. This assumption was likely to be true because the identity of participants was kept confidential and their participation was voluntary. The second assumption was that the single exploratory case study was the appropriate method for the research study. This assumption was likely true because the study included an investigation into the how and why of systems change. The third assumption included the use of PI by leaders as a strategic approach to systems improvement, including financial performance. This assumption was likely true because job descriptions were the basis for research participant selection.

### **6.2 Limitations**

Limitations are the potential weaknesses of the study that occur because the methodological design influences the interpretation and application of the results (Kehoe & Wright, 2013). The small sample size was a limitation of the study because the conclusions may not apply to the entire population of hospital leaders, according to Malterud, Siersma, and Guassora (2016). Bias was an additional prospective limitation as outlined by Madera (2013). Participant responses and researcher interpretations could influence the conclusions of the study (see Yin, 2018). I used a technique called bracketing to mitigate bias, which helps researchers set aside discriminations (see Pereira, 2012; Tufford & Newman, 2012)

### **6.3 Delimitations**

Delimitations are the restrictions placed upon the study by the researcher (Dean, 2014). Delimitations of the study include the range and border of the study to respond to the research question, according to Mitchell and Jolley (2010). The first delimitation was the location of the study, which was the southern region of the west south-central United States. The second delimitation was the collection of data from knowledgeable participants. Another delimitation was that the study included data from participants working in a hospital. The final delimitation was that the small sample size may not be representative of the population.

## **7. Significance of the Study**

Leaders in an organization often lack thorough understanding of PI philosophies and practices (Yapa, 2012). The lack of the implementation of PI in service organizations requires future research to continue theory development (Chakraborty & Tan, 2012). The healthcare industry is a complex system; therefore, PI improvement strategies could lead to innovation, specifically in areas of capability and capacity for change (Bergman, Hellström, Lifvergren, & Gustavsson, 2015).

## **8. Contribution to Business Practice**

Issues regarding PI not only affect the healthcare industry, but leaders across most industries, including those from nonprofits and for-profits (Baia, 2015; Bergman et al., 2015). Emphasis on PI in the healthcare industry could lead to improved technological processes and transformative learning practices within service organizations (Bergman et al., 2015). The results of this study could contribute to the body of knowledge on PI, not only in the healthcare service industry, but also in industries seeking to increase profitability by facilitating PI in the financial close process.

Organizational leaders seek strategic business approaches that extend beyond PI methods of define, measure, analyze, improve, and control processes to achieve a system change and continual PI (Jung-Lang, 2012).

Leaders of the organization should adapt and incorporate PI as a strategic business decision as a part of business strategy that permits for the incorporation of information, culture, and capability (Shokri, Waring, & Nabhani, 2016). The PI processes incorporated by a strategically integrated systems management approach could lead to increased profitability and improved productivity, along with reduced costs (Hallam, Valerdi, & Contreras, 2018).

The findings of this study may be important to the body of knowledge on PI and the TOC. Organizational leaders may see their organization as a complex system in need of a continual change improvement process. They could implement a process that could contribute to a competitive advantage and directly integrates cost reduction and process efficiency. The systematic methodology of PI requires more research and results could lead to an established theoretical foundation for organizations (Hallam et al., 2018; Jung-Lang, 2013).

## **9. Implications for Social Change**

The results of this study could also have implications for positive social change. Implications for successful reasons could assist leaders with new insight into dynamic systems change. By understanding the factors of PI endeavors, the costs associated with PI implementation could be reduced, thereby increasing profitability and competitive advantages (Hallam et al., 2018). Organizations that implement successful PI could achieve strategic competitive advantages along with increased ROI by understanding the dynamic change upon the structural factors of PI (i.e., leadership, culture, change, and training; Heavey et al., 2014; W. J. Miller, Duesing, Lowery, & Sumner, 2018). Because there are gaps in the strategies to achieve implementation maturity of PI, the results of this study could expose leadership to the dynamic complexity of systems change in the PI phenomenon (see Hallam et al., 2018). When leaders are aware of the factors influencing PI, there is potential for improved dynamic flexibility in response to changes in consumer demand and within industry challenges and opportunities (Kobus, Westner, & Strahinger, 2017). Finally, the use of PI in hospitals could provide insight into specific system processes that contribute to the rising cost of global healthcare (Honda, Bernardo, Gerolamo, & Davis, 2018).

## **10. A Review of the Professional and Academic Literature**

The purpose of this literature review was to gain an understanding of the financial closure processes in hospitals. This literature review includes a review of the U.S. healthcare system, hospital market structure, and financial performance with big data implications. Further analysis includes exploration of the conceptual framework, TOC, embedded within the context. Organization in this manner provided a substantiated reflection of the business problem in consideration of the most current literature.

For this literature review, I searched articles and journals from multiple databases, including, but not limited to ABI/INFORM, Business Source Complete, Emerald Insight, and Sage Journals. Some keywords and phrases used to search for literature, included, but were not limited to the theory of constraints, process improvement, qualitative methodology, and single case study design. The entire review consisted of 179 sources, of which 156 (87%) were published between 2015 and 2019 in peer-reviewed journals. Eight (4.5%) of the remaining sources were peer-reviewed articles published before 2015, while articles that were not peer reviewed, government websites, and books comprised the remaining 15 (8.5%) sources. Of the 179 sources included in the literature review, 167 (94%) were published between 2015 and 2019, while the remaining 12 (6%) were published before 2015.

### **10.1 Organization of the Literature Review**

The literature review was organized to focus on the analysis of major themes in the literature. Throughout the review, I provide a framework for the multivariate relationship among each major theme; its connection to the U.S. healthcare economic system; and the social, political, and cultural complexities entwined within the landscape. The review of each theme includes the presentation of background information; exploration of the factors that affect or are affected by the healthcare system problem; discussion of the roles played by households, businesses, and government; and evaluation of the business problem within the system landscape based on the applicable conceptual framework. Organization in this manner allowed for exploration of the dynamic complexities within the healthcare system landscape and to set the tone as well as establish a thorough background for the study.

### **10.2 Conceptual Framework: TOC and PI**

The TOC framework provides an approach for organizations to maximize quality using systematic procedures (Goldratt, 1990). Dynamic market environments require business leaders to use innovative decision-making strategies to gain competitive advantages (Kamalluarifin, 2018). PI strategies embedded within the TOC framework include the division of labor to increase efficiencies (Goldratt and Cox, 2004) Although I reviewed alternate and contrasting theories, TOC and PI aligned with the explicit problem and purpose of the study.

One alternative theory is the dynamic capability view (DCV) theory of the firm. DCV includes a foundation for dynamic management practices leading to long-term growth and overall firm sustainability (Wilden, Devinney, & Dowling, 2016). Business leaders use DCV to purposely produce, extend, or adjust the base of resources (Pezeshkan, Fainshmidt, Nair, Frazier, & Markowski, 2016). Although scholars hypothesize DCV applies to environments with dynamic complexities, empirical research remains dispersed and conflicted (Pezeshkan et al., 2016; Ringov, 2017). Extant research lacks explicit definitions and measurements for constructs in the DCV framework, making application to this study incongruent.

Another alternate theory is the corporate social responsibility (CSR) view of the firm, which includes investigation of a phenomenon through social and environmental factors (Strand & Freeman, 2015). The CSR framework is young within the literature and encompasses loosely defined constructs (Strand & Freeman, 2015). Although the healthcare system is a social good, CSR is inappropriate due to the implicit construct delimitations.

An alternate theory that supports investigating the dynamic phenomena is Porter's five forces and the run, grow, and transform framework, where firms can leverage IT to achieve competitive advantages through increases in productivity (Khoja, 2016). Although Porter's five forces and the run, grow, and transform framework could have been used to assess unambiguous big data within the hospital landscape, this framework does not incorporate factors of efficiency and quality. The TOC and PI framework was more applicable to the study as substantiated by research conducted by Antony, Setijono, and Dahlgaard (2016), which linked PI directly to lean six sigma (LSS) with a focus on process innovation, incremental innovation, and innovation capability.

### **10.3 Historical Perspective: TOC and PI**

The PI and TOC strategies have evolved throughout the history of the manufacturing and service industries. In the late 1970s, researchers developed an organizational system approach to coherent management theory based upon optimized production technology software (OPT; Rahman, 1998). Two components of OPT included the evolution of continuous improvement and thinking processes within a systems approach (Rahman, 1998). The TOC evolved from the OPT phenomenon beginning in 1979 (Myrelid & Olhager, 2015; Rahman, 1998). In 1984, Goldratt discussed the TOC as a phenomenon where every organization has at least one constraint that limits inclusive organizational performance (D'Andreamatteo, Ianni, Lega, & Sargiacomo, 2015; Rahman, 1998). To investigate the constraint, Goldratt (1990) further defined the constructs as researchers studied and implemented components of the TOC as a thinking process for problem identification, strategies to solve problems, and implementation of strategies to facilitate change. The successful implementation of PI as a system-wide occurrence within the business unit mindset includes incorporation of measures that drive business and the methods engaged in the business (Goldratt & Cox, 2004).

The TOC framework contains five focusing steps: (a) business leaders identify system constraints, including physical and managerial aspects (Goldratt, 1990); (b) business leaders determine how to exploit the identified constraints (Rahman, 1998); (c) every nonconstraint is analyzed and adjusted to support the efficiency of resolving the constraint (Rahman, 1998); (d) leaders must elevate the existing constraints and develop continuous improvement efforts to resolve the constraints (Goldratt, 1990); and (e) if a constraint improvement process fails, begin with Step 1 again as a part of continual PI because inertia could also become a constraint (Rahman, 1998). Logistically, the TOC paradigm evolved from OPT and contains nine rules: balance of flow not capacity, exploitation of bottleneck issues come from a constraint in the system, utilization and activation of a resource is not identical, an hour lost in bottleneck is an hour of total system loss, an hour saved at a nonbottleneck is an illusion, bottlenecks contribute throughput and inventories, transfer batch should not equal process batch, process batch is variable, and schedules should involve all system constraints concurrently (Rahman, 1998).

### **10.4 Quality Improvement Movements**

Further evolution of the quality movement literature included statistical quality control (SQC), total quality control (TQC), and total quality management (TQM; Feigenbaum, 1991). Leaders use SQC to improve quality by removing defective components to control production costs (Feigenbaum, 1991). TQC evolved from SQC as a set of guidelines that represent continuous improvement within organizations (Feigenbaum, 1991). Business leaders used TQC, before the development of Deming's TQM management philosophy, to improve quality and productivity (Rahman, 1998). In the late 1940s and early 1950s, Deming introduced the concept of a system of profound knowledge (Deming & Edwards, 1986). The system of profound knowledge includes 14 key principles that encourage productivity and quality (Deming & Edwards, 1986). In the late 1950s, total productive maintenance (TPM) studies led to preventative maintenance initiatives and the automation of processes (Kasim, Musa, Razali, Noor, & Saidin, 2015).

Leaders use TPM philosophies to reduce downtime and loss thereby increasing the efficiency of the system (Kasim et al., 2015). TPM and TQM philosophies are complementary, whereas TPM processes are integrated within TQM managerial philosophies (Rahman, 1998). Furthermore, TQM philosophies include guiding principles focused on continual PI within the organization and the quality movement (W. J. Miller et al., 2018). Recent developments have included a TQM framework in the services industry integrated as a global trend, national mandate, industry trend, organizational strategy, and personal philosophy (W. J. Miller et al., 2018).

Six sigma and lean manufacturing. In the late 1980s and early 1990s, six sigma and lean manufacturing evolved within the literature as means to PI in quality. Leadership pioneers at Motorola, AlliedSignal, 3M, and GE sought to improve their performance with a new form of TQM: six sigma (Marzagão & Carvalho, 2016). The six sigma phases to improve processes for increased profitability include define, measure, analyze, improve, and control (Dubey, Gunasekaran, Childe, Wamba, & Papadopoulos, 2016). The organizational structure of firms included implementing certified experts to lead improvement projects: master black belts, black belts, and green belts (Marzagão & Carvalho, 2016).

Lean manufacturing philosophies evolved within the literature in the early 1990s as a means to increase productivity, maximize value, and eliminate waste (D'Andreanatteo et al., 2015). Lean definitions included a dynamic PI of change driven by a comprehensive list of best practices involving continuous improvement (Albliwi, Antony, & Lim, 2015). Origins of lean manufacturing began with the Toyota production system and eventually, just-in-time inventory systems (Albliwi et al., 2015). The primary focus of lean manufacturing included the removal of nonvalue-added activities and waste (Albliwi et al., 2015). Seven types of original waste included motion, overproduction, overprocessing, lead-time, rework, inventory, and defects (Albliwi et al., 2015; Hallam et al., 2018). Two additional types of waste evolved throughout the literature to include the underutilization of human capital and environmental factors (Albliwi et al., 2015).

Overall, lean is an operational management strategy focused on improving the competitive priorities of quality, cost, flexibility, and delivery within organizations (Hallam et al., 2018). Although lean philosophies contributed to customer lead time reductions, decreased manufacturing costs, and reduced cycle times with improved quality, organizations implementing lean practices have mixed results in lean implementations (Hallam et al., 2018). Gaps in the lean literature include how to link transformative lean strategies to leadership actions related to financial performance (Hallam et al., 2018; Mohamed & Mwanoyota, 2018).

### **10.5 TOC studies.**

Goldratt (1990) developed the TOC to apply a scientific approach to solve business problems (Cox & Robinson, 2017). Widely studied throughout the manufacturing industry, TOC incorporates two premises: identification of the constraint(s) to improve output and profit maximization (Chawla & Kant, 2018). Constraint(s) occur while navigating the system landscape without changes to policies, often controlled by management (Chawla & Kant, 2018). Three categories of recurrent constraints are physical, policy, or behavior (Chawla & Kant, 2018). Further investigation of constraint(s) should include looking into the dynamics of complex systems (Mohammadi, Ghazanfari, Nozari, & Shafiezed, 2015; Sanjika & Bezuidenhout, 2016).

Studies about TOC within the manufacturing sector include the discovery of thinking processes (Cox & Robinson, 2017; Modi, Lowalekar, & Bhatta, 2018). Luiz et al. (2018) revealed project management (PM) as well as the contributions of scheduling and critical chains to successful TOC projects. PM includes bridging the gap between the firm and stakeholders through projects (Heredia, 2017). Uncertainty and project complexity entwine within value creation and project value (Heredia, 2017). Research is lacking in the areas of production and PI; therefore, there is a need for more research to understand the complex systems change (Ikeziri, Souza, Gupta, & de Camargo Fiorini, 2018; Sanjika & Bezuidenhout, 2016).

Researchers have used TOC to investigate the services sector. Three constructs discovered within the services literature include logistics, performance, and logical thinking (Chawla & Kant, 2018). Logistics studies include investigations in supply chain management (SCM; Swanson, Goel, Francisco, & Stock, 2017). Although the SCM framework was first mentioned in 1983, recent SCM scholars have discovered relationships and collaboration, purchasing and supply management, and strategy as constructs in need of more research (Swanson et al., 2017). Comparable results in findings are parallel within the marketing and information system processes within the system (Swanson et al., 2017).

Performance measures include operational and financial performance. Performance studies in the jute industries of India revealed decreases in bottlenecks in PM operational processes led to a .03% increase in ROI (Al Amin, Saha, & Mohona, 2018). Matthews and Marzec (2017) connected the operational performance to three consistent themes: continuous improvement, quality improvements, and PI. Further entwined are organizational learning factors that complicate the measurement of constraints within the system mitigated by techniques including use of drum buffer rope (DBR) sequencing scheduling within the thinking processes of the complex system (Matthews & Marzec, 2017). Logical thinking processes include comprehensive mapping tools to logically depict a problematic process and provide knowledge for possible solutions (Mabin, Yee, Babington, Caldwell, & Moore, 2017). Business leaders who use DBR with a TOC framework create operational and financial advantages at each level within the SCM process (Costas, Ponte, de la Fuente, Pino, & Puche, 2015). While the DBR approach allows leaders to manage the system, business leaders must also gain access to knowledge to engage in continuous improvement (Costas et al., 2015; Mabin et al., 2017).

The origins of dynamic complex organizational forms began with a shift in organizational change from the industrial age to the information age (Balloni & Targowsk, 2015). Hard and soft technologies evolved from the breadth of knowledge within the natural and behavioral sciences (Balloni & Targowsk, 2015). Business leaders must use disambiguous hard data in reporting, as the soft ambiguous data in reporting is unclear to stakeholders (Bertomeu & Marinovic, 2015). Due to social, cultural, and economic realities, leaders started viewing the organization as a living organism with synergism, shared leadership, information partnerships, and collaborative relationships within the information age (Balloni & Targowski, 2015).

Dynamic market environments require business leaders to use varying methods to gain competitive advantages through decision-making, including varying methods to measure efficiency (Kamalluarifin, 2018; Trojanowska, Kolinski, Varela, & Machado, 2017). Within the literature about TOC, throughput accounting evolved in the early 1990s (Hilmola & Li, 2016). Goldratt (1990) argued operational accounting procedures involving cost accounting philosophies did not provide measurements of a product mix in outsourcing, new products and services, and increases in demand for alternates. Cost accounting measures made profit determinations difficult at the process level when more than one constraint influenced the process flow, leading to lack of unambiguous data business leaders use for effective decision-making (Hilmola & Li, 2016).

Trojanowska et al. (2017) argued increased efficiency in one department does not lead to guaranteed efficiency in other departments, and anything that obstructs profit prevents overall efficiency. The mixed-method analysis of the TOC efficiency measures revealed substantial risk factors: (a) contradicting operational objectives within individual departments in relation to strategic goals of the firm, (b) contradicting strategic objectives in firms with a single supply chain, (c) contradictory operating objectives within different organization departments, and (d) negative impact on the overall environment (Trojanowska et al., 2017). Therefore, business leaders should seek overall system efficiency of a key process to achieve profit maximization (Ikeziri et al., 2018; Trojanowska et al., 2017). There is a need for more qualitative research to understand the holistic thinking process tools and causal relationships to help reveal and validate key process efficiencies (Kuruvilla, 2018).

Although leaders use operational cost accounting processes to focus on external stakeholder reporting, the calculation methods are incongruent with a holistic view of the process flow within the TOC literature (Parkhi, Tamraparni, & Punjabi, 2016). Managerial accounting approaches assist business leaders with making better decisions based on costing, processes, standard costing, kaizen accounting, and throughput accounting (Parkhi et al., 2016). Although Goldratt argued cost accounting measures are not useful in gaining productivity improvements (Hilmola & Li, 2016), financial leaders can make better strategic decisions because the managerial cost accounting methods give an alternative perspective (Parkhi et al., 2016). However, the lack of studies on linkages of a performance measurement to operational accounting practices within the TOC and PI framework, there is a need for more research on throughput accounting and operational accounting linked to business decisions (Hilmola & Li, 2016; Parkhi et al., 2016; Trojanowska et al., 2017). Uncertainty at the defined process flows of suppliers, production, and customers adds to additional system complexity (Modi et al., 2018). When leaders view the TOC as a unique holistic approach to thinking systems within the organization, sales grew 50% of the time within a 3-year period as well as profits doubled, leading to increased cash flows (Modi et al., 2018).

Alternatively, empirical researchers discovered business leaders use the TOC practices differently throughout the world (Panizzolo, 2016). DBR methods, master production scheduling based on constraints, and non-constraint resources with extra capacity provide competitive advantages through economies of scale (Panizzolo, 2016).



Furthermore, organization leaders faced with dynamic managerial complexities can evaluate value-added resources and estimate demand by integrating aspects of the TOC and PI frameworks, while achieving improved efficiency and firm performance (Pérez Campdesuñer, Pérez Pravia, Sánchez Rodríguez, García Vidal, & Martínez Vivar, 2017; Ronen, Pliskin, & Pass, 2018).

Researchers discovered the TOC framework, combined with the workload control principle, can address simulated bottleneck implications within the flow of processes (Thürer, Stevenson, Silva, & Qu, 2017). Bottlenecks shift throughout the processes, and the DBRs need continual adjustments (Thürer et al., 2017). Although researchers use TOC foundations to study a broad range of phenomena, research is evolving in the TOC hospital service sector to address the widening gaps between cost and revenue and cost-effectiveness (Ronen et al., 2018). The idiosyncratic market structure of the hospital sector embedded within social, political, and cultural realities led researchers to posit how hospitals leaders can improve efficiency using manufacturing research (Mohamed & Mwanyota, 2018; Ronen et al., 2018). However, researchers argue lean management practices in hospitals within the PI framework produced significant correlations with financial performance (Honda et al., 2018).

The application of manufacturing research applied to the service sector is congruent with the progression of the TOC research. The intent for this study was to investigate how leaders used aspects of the TOC framework to identify performance constraints that lead to improved organizational knowledge as well as how this contributes to improved strategic decisions based on the timeliness of information. Furthermore, the unique TOC framework allows researchers to investigate holistic approaches. Embedding Goldratt's PI improvement philosophies within the TOC framework allowed financial leaders to identify and eliminate constraints and made the TOC and PI the conceptual framework of this study.

The roots of PI are in Adam Smith's 1776 text *The Wealth of Nations*, where he discussed the division of labor as a means to increase efficiency in undeveloped forms (Moldovan-Borsos & Matei, 2016; Ramírez & Nembhard, 2004). Fredrick Taylor further advanced PI research with the distinction of studying the specific workflow tasks from the perspective of standardized processes, systematic training, and sound structure of employees and management (Ramírez & Nembhard, 2004; Schlesinger et al., 2018). In contrast, Drucker believed the workers needed incentives to be fully productive, and he coined the term knowledge-workers (Moldovan-Borsos & Matei, 2016; Ramírez & Nembhard, 2004; Schlesinger et al., 2018).

Before the 1990s, Smith, Taylor, and Drucker were the primary scholars within the PI framework (Schlesinger et al., 2018). In the 1990s, Goldratt (1990) continued exploration of PI from the perspective of the organizational leadership role in systems change within the mindset of the business unit, with focus on the measures that drive the business and the specific methods employed in the business unit. Blending the TOC with PI allows for refinement of thinking processes used to identify problems, development of strategies to solve problems, and implementation of a strategy to facilitate change (Goldratt, 1990).

### **10.6 PI studies.**

Early PI studies include the study of blue-collar workers with an emphasis on productivity measures, whereas later studies include viewing workers as knowledge workers (Drucker, 2006; Ramírez & Nembhard, 2004). In 1920, blue-collar workers greatly outnumbered white-collar workers 2:1 (Ramírez & Nembhard, 2004). The shift in labor productivity studies became relevant in the literature as early as 1956 when white-collar workers began to outnumber blue-collar workers and continued into the 1980s where white-collar workers were nearly double blue-collar 2:1 (Ramírez & Nembhard, 2004). Scholars attribute the shift in workers to changing economic conditions from the industrial age to the information age, leading to changes within manual labor productivity and the evolution of knowledge workers to create value (Drucker, 2006).

Scholars studied PI within various environments and disciplines to understand the implications for quality improvements. Within the global manufacturing sector, researchers revealed management practices with PI led to reductions in inefficiencies before outsourcing; however, excessive changes to requirements within the outsourcing process creates complexity for the vendor, limiting the opportunities for efficiency (McIvor, 2016). In the healthcare setting, the usage of visual management tools increased organizational and social job resources among nurses, which directly contributed to PI within the organization cross-functionally (Williamsson, Dellve, & Karlun, 2019). In the service sector, Australian universities may not engage in PI practices; excellence, efficiency, and sustainability are high-level goals; yet, there is limited evidence supporting the use of business process improvement publicly available for analysis (Ciando, 2018).

There is a need for more research to investigate PI initiatives as well as the specific implementation practices across sectors, disciplines, and research methodologies (Ciando, 2018; McIvor, 2016; Williamsson et al., 2019).

Recognizing needs for structured PI practices, researchers studied manufacturing and service sectors to gain an understanding of the explicit practices used to perfect the elimination of waste through continuous improvement practices (Albzeirat et al., 2018). There is insufficient literature about PI practices in developing economic systems within the manufacturing sector. This phenomenon occurs because of the lack of unambiguous data about PI practices (De Zan, De Toni, Fornasier, & Battistella, 2015; Singh, Meena, & Panwar, 2016).

To understand the complex interaction of knowledge within the manufacturing sector, researchers studied an Indian manufacturing organization to investigate factors of PI relating to quality improvements and customer satisfaction (Singh et al., 2016). Although the organization members understood needs for PI, the workers did not understand the operational PI practices of lean manufacturing and the corresponding relationships to outcomes. Relevant to the gap within the literature, scholars continued to study PI from the perspective of organizational learning (De Zan et al., 2015). Scholars developed a learning process analysis matrix framework to address the dynamic complexity among variables and the respective assessment within PI initiatives (De Zan et al., 2015). Four variables applicable to experimental learning within PI included tangible experience, reflective observation, conceptual synthesis, and experimentation (De Zan et al., 2015). Albzeirat et al. (2018) discovered lean PI studies do not include the identification of measurements for PI initiatives and there is a need for more research to consider the applied application of PI and associated measurements.

Albzeirat et al. (2018) found that using TQM, just-in-time manufacturing, and TPM principles integrated with PI practices in the development of human capital within the workforce is critical to the implementation of lean management philosophies. Increased knowledge contributes to operational performance goals (Uhrin, Bruque-Cámara, & Moyano-Fuentes, 2017). Kumar and Kumar (2016) studied the PI phenomenon by identifying the flow of lean attributes: supplier participation, operational initiatives, employee involvement, and customer participation. There is a need for more research to address the strategies successful leaders use to implement continual PI initiatives of improved process efficiency, patient safety, quality, delivery, and employee satisfaction within the hospital services industry (Gonzalez-Aleu, Van Aken, Cross, & Glover, 2018).

The status of PI initiatives using a mathematical model included evaluating the significance of the structural PI factors that allow for comparisons among the manufacturing industry PI initiatives as well as opportunities for leaders to identify PI initiatives requiring intervention (Kumar & Kumar, 2016). Furthermore, researchers investigated PI with an analytical hierarchy process approach to investigate the impact of lean initiatives and green practices relative to the overall sustainability of the firm (Thanki, Govindan, & Thakkar, 2016). Thanki et al. (2016) discovered the most important lean practice is TPM related to organizational sustainability within green initiatives. Overarching themes of these studies include linking the refining of processes to firm goals to encourage efficiency, yet the explicit operational measurement of the PI initiatives is lacking (Kumar & Kumar, 2016; Thanki et al., 2016; Uhrin et al., 2017).

Approximately 60% of leaders fail to implement successful six sigma PI initiatives (Alcaide-Muñoz & Gutierrez-Gutierrez, 2017). Failures occur because of inconsistencies at three different PI stages in quality management: definition of the framework, application and usage, and measurable constructs (Yadav, Seth, & Desi, 2017). Clearly defined construct identification allows leaders to facilitate measures as well as understand and communicate throughout the organization, where the failures of successful lean and six sigma PI occur (Yadav et al., 2017). Furthermore, successful six sigma implementation includes exploitation of practices as well as explorative practices, where combining these practices could lead to overall successful implementation of six sigma (Alcaide-Muñoz & Gutierrez-Gutierrez, 2017).

There are two reasons attributed to the successful implementation of PI within six sigma and lean business performance enhancing philosophies. First, the operational management field is young compared to other organizational sciences (Dubey et al., 2016). Second, most of the prior research contains production and management normative research approaches that evolved primarily from quantitative research (Dubey et al., 2016). Dubey et al. (2016) expressed a need for qualitative and mixed method research to continue the progression of the PI theory development.

Implementation of operational management philosophies contributed to approximately 10% of improvement in net income, 20% improvement in gross margin, and 10% to 30% capital reductions improvement for each operational PI sigma initiative adopted within an organization (Aldowasian, Nourfath, & Hassan, 2015). Yet, there is a lack of methodical frameworks to guide organizations to choose a suitable PI innovation (Patel & Desai, 2018). To continue theoretical developments within operational PI initiatives, there is a need for more research beyond the breadth of empirical literature (Patel & Desai, 2018).

Mixed method and qualitative studies are replete within the lean, six sigma, and LSS literature. Researchers used a mixed method methodology to investigate the key success and failure factors of the LSS PI initiatives in Ireland (Iyede, Fallon, & Donnellan, 2018). Key success factors include management commitment, knowledge of LSS methodology, tools, and techniques incorporating LSS into business strategy, organizational culture change, and training and education (Iyede et al., 2018).

Key failures include poor organizational strategy, lack of management support, cost of LSS implementations, and unclear LSS projects with correlations to cost-effectiveness (Iyede et al., 2018). Antony, Rodgers, Coull, and Sunder (2018) used a case study methodology to investigate the PI initiatives inside organizational learning in Poland. The LSS philosophy of using elements of a change program on a specific process, embedded within the larger PI initiative, revealed strong teams, effective change management techniques, silo thinking, linkages to performance management, and flexible deployment are the essential aspects of LSS (Anthony et al., 2018).

Still, business leaders seek PI innovations to improve their business processes and enhance operating performance; yet, scholars reveal evolving lean and six sigma philosophies are expensive as well as disruptive to adopt (Jacobs, Swink, & Linderman, 2015). Scholars studied chaos of the PI phenomenon from the perspective of the ideal time to adopt lean or six sigma practices within the organization and within the competitive market landscape (Jacobs et al., 2015). Early adoptions of operational PI innovations led to learning-by-doing practices within the organization because of the lack of experience and accumulation of knowledge on PI (Jacobs et al., 2015). However, leaders of organizations who are first to adopt PI innovations gain competitive advantages researchers describe as a first mover advantage, and the leaders likely refine the PI practices throughout time (Lamberson & Page, 2017).

Leaders who wait to adopt operational PI initiatives may benefit from the information available about the successful implementation characteristics; however, high levels of uncertainty and dynamic market complexities of landscape chaos research and knowledge stocks lack specific characteristics of successful implementations related to current operational practices (Jacobs et al., 2015). Researchers argued leaders in dynamic organizations gain a competitive advantage when characteristics of the organization include the ability to quickly learn and adapt to complexities within the landscape (Jacobs et al., 2015). Hence, successful PI initiatives in dynamic environments require leaders to view PI as a means to advance organizational sustainability, and that the timing of when leaders adopt PI initiatives does not follow conventional theories in management strategy (Jacobs et al., 2015; Lamberson & Page, 2017).

Although scholars primarily focused on PI in the manufacturing sector earlier in the research, researchers postulate PI is useful within the services sector (Albzeirat et al., 2018). In services organizations, investigators applied lean methodology to address issues of waste reduction that leads to process efficiency, whereas leaders used six sigma to address refining processes to reduce variability (Antony, Snee, & Hoerl, 2017). A mixed method study of PI within the services sector includes partial adoptions of the LSS frameworks with an emphasis of process efficiency; however, there are opportunities for business leaders who properly implement adapted lean methods for services with a focus on creating customer satisfaction (M. Smith, Paton, & MacBryde, 2018).

Similar to the literature about PI initiatives in the manufacturing sector, critical success factors identified by researchers in the educational service sector include management support and commitment, effective communication, strategic and visionary leadership, project selection, and organizational culture (Cudney, Venuthurumilli, Materla, & Antony, 2018). Researchers discovered six sigma, design for six sigma, and TQM PI practices lead to enhanced student organization and presentation of ideas in student learning outcomes when statistically measured by constructs of design, measure, analyze, and control (LeMahieu, Nordstrum, & Cudney, 2017). Challenges within the education sector include lack of awareness of PI initiatives, failures identifying and targeting customers, lack of interest from stakeholders, and adaptation of the manufacturing successes to the services sector (Cudney et al., 2018).

PI improvement studies include the application of manufacturing processes to service processes in the hospital sector; yet, there are gaps within the literature explicitly related to measuring the quality impact of PI (Albzeirat et al., 2018).

Business leaders in the hospital sector seek to address issues of quality, possibly due to the Medicare subsidies encouraging better quality, safety, and patient care (Lee, McFadden, & Gowen, 2018). Scholars argue operational empirical data are inconclusive in respect to lean and six sigma as best practice in the hospital sector (Lee et al., 2018). There is limited evidence to support increases in healthcare operational performance as illustrated within the operational manufacturing PI practices (Deblois & Lepanto, 2016). Although some hospital leaders seek to engage in PI innovations, 54% of hospital leaders did not intend to adopt a form of PI discovered within the manufacturing literature (Lee et al., 2018). Due to the gap in the literature, more research is needed to continue the TOC within PI theory development and conceptual framework within the services sector, specifically in hospitals (Deblois & Lepanto, 2016; Hasle, Nielsen, & Edwards, 2016; Lee et al., 2018).

Investments in electronic health records information systems correlate to increases in the quality of patient care and positive financial performance (T. Wang, Wang, & McLeod, 2018). Adoption of electronic medical records (EMR) among for-profit and nonprofit hospitals occurs due to gains from a government subsidies program and the expense involved with a complex dynamic healthcare information system deters adoption (Freedman & Lin, 2018). Big data within the healthcare system landscape adds to additional chaos, where hospital leaders are inundated with ambiguous big data; yet, transformation of data to make better decisions within the hospital market is underdeveloped within the literature (Janvrin & Watson, 2017). Within any market structure, and especially the dynamic idiosyncratic hospital market structure, gaining access to unambiguous data is essential to decision making frameworks within the social sciences (Arnaboldi, 2018).

The lack of literature about hospitals and PI explicitly about cost reduction and value creation is gaining the interest of researchers. Therefore, the scope of this study included identification of a measurable construct using TOC and PI framework. The timeliness of financial reporting is an overlooked measure within the literature (Javrin & Mascha, 2014), whereas the regulatory reporting requirements were not applicable to this study. To gain a sustainable competitive advantage, financial leaders use reports containing the relative financial position of the firm to make timely decisions (Kamalluarifin, 2018). The results of this study contributed to the TOC and PI studies embedded within LSS methodology by assessing the collective efforts to improve hospital quality by removing waste and reducing variation to target intermediate processes. The goals of this study included investigation of reducing costs and increasing value using measurable constructs of operational accounting procedures related to the ultimate profit-maximizing goal of the firm. To the best of my knowledge, this was the first qualitative case study used to investigate the TOC and PI initiatives in hospitals, using timeliness of reporting as a construct, in which business leaders made better strategic business decisions.

### **10.7 Alternate and Contrasting Theories**

Due to the dynamic complexity of the healthcare system, researchers use a variety of theoretical and conceptual frameworks to understand the phenomena. After investigating different theories, the TOC and PI framework was found appropriate to allow for the investigation of efficiency and quality. Alternate and contrasting theories lacked the framework and applicable constructs to investigate the unique phenomenon of this study.

An alternate theory of the CSR view of the firm includes investigation of a phenomenon through social and environmental factors (Strand & Freeman, 2015). The CSR framework is young within the literature and encompasses loosely defined constructs (Strand & Freeman, 2015). Another alternate theory that supports investigating the dynamic phenomena includes Porter's five forces and run, grow, and transform framework, where firms can leverage IT to achieve competitive advantages through increases in productivity (Khoja, 2016). Although Porter's five forces and the run, grow, and transform framework could be used to assess unambiguous big data within the hospital landscape, this framework does not incorporate factors of efficiency and quality. Another contrasting theory, the dynamic capability view (DCV), of the firm, provides a basis for dynamic management practices leading to long-term growth and overall firm sustainability (Wilden et al., 2016).

Dynamic capability view. Alternatively, the DCV theory of the firm provides a basis for dynamic management practices leading to long-term growth and overall firm sustainability (Wilden et al., 2016). The DCV is the ability of business leaders within an organization to purposely create, extend, or modify the base of resources (Pezeshkan et al., 2016). Advances within the DCV literature reveal business leaders who access market-based knowledge and use the insight discovered can reconfigure the resources of the firm to gain competitive advantages (Wilden & Gudergan, 2015). Although scholars' postulate DCV applies to systems with idiosyncratic complexities, empirical research remains disseminated and dissonant (Pezeshkan et al., 2016; Ringov, 2017).

Leaders struggle with intangible and lagging innovative advantages, which are difficult to measure (Lin, Su, & Higgins, 2016). The DCV drives management innovations when leaders use a process-oriented framework of sensing capability, absorptive capacity, and integrative capacity (Lin et al., 2016). Although there is a link between DCV and firm performance, higher order processes are more generic, abstract, complex, and difficult to imitate (Pezeshkan et al., 2016). Furthermore, the foundations of DCV evolved from a 1997 publication about dynamic systems, whereas the strategic management frameworks of DCV are relatively new within the literature (Ringov, 2017). These findings are problematic considering the DCV foundation incorporates a knowledge base that cannot be confirmed within the literature for hospital performance measures. Therefore, the TOC and PI were most applicable to the study as substantiated by research discovered by Antony et al. (2016) that links PI directly to LSS with focus on process innovation, incremental innovation, and innovation capability.

### **10.8 TOC and PI within a Dynamic Market Structure: The U.S. Healthcare System**

In 2014, 17.5% of economic growth in the United States came from healthcare expenditures (Eldenburg, Krishnan, & Krishnan, 2017). Although healthcare spending positively contributed to growth, the U.S. healthcare system is replete with rising costs and inefficiencies, along with uncertainty about future laws and regulations (Eldenburg et al., 2017). The U.S. healthcare system is uniquely faceted within a dynamic economic system where households, business, and government interact (Colander, 2017). Social, political, and cultural realities add to the complexity of the system landscape (Colander, 2017; L. R. Miller & Benjamin, 2018). Furthermore, there is a continual debate on whether the healthcare system fits in respect to categorization of business as a private good, in government as a public good, or a combination of those (Cannon et al., 2018). In the following paragraphs, I present the foundations of the healthcare system landscape and at the conclusion of this section, I continue the discussion with an analysis of the hospital market structure and financial performance as means to fill a gap within the TOC studies discovered within the literature for a measurable PI construct that helps financial leaders make timely business decisions. I also present the implications for more research to understand the dynamic social, political, and cultural issues within the healthcare system and the associated need for social change within the hospital market structure.

The leadership members at the World Health Organization guide global healthcare standards; however, the U.S. healthcare system is an independent evolving economic system that functions nationally, regionally, and locally (Batterham, Hawkins, Collins, Buchbinder, & Osborne, 2016; Leaper & Edmiston, 2017). Originally designed to treat illness and manage chronic diseases, the healthcare system in the United States needs to systemically transform to address challenges of high and escalating costs, standards for care, revenue streams, and information failures that contribute to increased system inefficiency and value (Antos, 2015; J. P. Roberts, Fisher, Towbridge, & Bent, 2016). Consumers in the U.S. healthcare system spend more than any other nation; yet, healthcare access rates for users has remained the same since at least 2013 (Papanicolas, Woskie, & Jha, 2018). Prices of goods, labor, and administrative costs within the health system continue to rise, contributing to a need for a complete system overhaul to increase value and efficiency (Emanuel, 2018; Papanicolas et al., 2018).

The role of government in healthcare. Since the 1960s, the role of government in healthcare included the adoption of legislative changes in an attempt to control costs, contain growth, increase access, and increase competition in the healthcare sector (Jakovljevic & Ogura, 2016; Obama, 2016). In the 1990s, leaders in Australia and Canada were first and second, respectively, in implementing legislation, considered socialized medicine, that requires measures in the healthcare sector to have a direct budget-impact with cost-effective evidence to provide healthcare as a public good (Jakovljevic & Ogura, 2016). The role of government in the United States included passage of the most relevant healthcare law since the inception of Medicare and Medicaid in 1965: The Affordable Care Act (ACA; Obama, 2016).

### **10.9 The ACA.**

The U.S. government politicians intervened in the household and business sector to promote an overall healthier society and to reduce inequalities (Frea, Gruber, & Sommers, 2017). Although 10 million people in households gained health insurance after the passage of the ACA, 28 million people remain uninsured (Carman, Eibner, & Paddock, 2015; Himmelstein, Woolhanger, Almbury, & Faulke, 2018). Gaffney and McCormick (2017) discovered the number of uninsured people is closer to 29 million when they analyzed data along economic, gender, and racial socioeconomic factors. Some argue household and business taxes for not purchasing mandatory ACA insurance coverage violates economic freedoms (Callison & Sicilian, 2018). Furthermore, those opposed to the ACA claim that the ACA simply shifts the payer mix (Callison & Sicilian, 2018; Pines et al., 2016; Rudnicki et al., 2016;).

The policymakers of the ACA legislation sought to keep healthcare in the business sector alongside providing provisions for members of households in the U.S. economy as well as reduce costs, increase access, and increase quality within the healthcare system (Obama, 2016). Soon after the ACA enactment, President Trump and a new political regime with polar public policy views took control of the U.S. government. Consequently, the ACA is in jeopardy of repeal with no legislation presented to address reforms that reduce costs to patients (Dickman, Himmelstein, & Woolhandler, 2017; Sarpatwari, Avorn, & Kesselheim, 2018).

Congressional members were unsuccessful in repealing and replacing the ACA (Buehler et al., 2018). In May 2017, Republican led members of the House of Representatives voted 217 to 213 [Democrats] in favor of repealing the ACA and replacing with the American Health Care Act (Carrasquillo & Mueller, 2018). In June 2017, members of the Senate introduced similar legislation known as the Better Care Reconciliation Act (Carrasquillo & Mueller, 2018). The members in the congressional budget office suggested both proposed bills would leave approximately 15 million people without health insurance coverage (Carrasquillo & Mueller, 2018). Data released by the congressional budget office revealed within 10 years approximately 25 million more people would be uninsured under Better Care Reconciliation Act or American Health Care Act compared to leaving the ACA in place (Carrasquillo & Mueller, 2018). Republican members were not able to obtain enough votes on the Better Care Reconciliation Act or subsequent variations of the legislation, and then proposed a repeal only version which failed by a 51 to 49 vote (Carrasquillo & Mueller, 2018). It is unclear if President Trump and the Republican members will continue to pursue repeal and replace or repeal alone (Carrasquillo & Mueller, 2018; Obama, 2016).

Consequently, there is a concern that the ACA does not provide equitable healthcare access because optional expanded coverage at the state level is creating a fragmented, inefficient healthcare system that contributes to rising healthcare costs (Carrasquillo & Mueller, 2018). Debates over the future of the healthcare system will likely include provisions aimed toward value of the government-funded Medicare and Medicaid programs and mandates for nonprofit hospitals to assess community healthcare needs (Buehler et al., 2018). To address the healthcare system environment, three areas that need ongoing assessment include composition of healthcare population, measurement of health and health risks within the population, and use of knowledge gained to drive future healthcare reforms (Buehler et al., 2018).

Hence, the role of government greatly varies among countries, and government actions depend upon the political views of the policymakers as to whether healthcare is a public good or a private good. From an economic standpoint, a robust economic system contributes to the overall growth of market economies; therefore, there is an incentive for government representatives to intervene in the system to encourage interaction of business and households (Alexandersen et al., 2016; Colander, 2017; L. R. Miller & Benjamin, 2018). Subsequently, government intervention did not reduce the expenditures of the U.S. government to the healthcare system. The U.S. government paid for approximately 65% of all health-care expenditures, which exceeds every country but Switzerland (Dickman et al., 2018).

#### **10.10 History of hospitals.**

In 2014, 32% of healthcare expenditures involved the hospital industry (Rosko, Wong, & Mutter, 2016). The competitive market environment for hospitals is dynamic due to the emergence of multisystem and system hospitals competing in various geographic locations (Schmitt, 2018). Within the hospital segment, three classifications identified include private nonprofit, investor owned systems, and total investor owned (Sloan & Vraciu, 1973). Private nonprofit hospitals are more likely religious, secular businesses that take advantage of the tax-exempt status in the U.S. Internal Revenue Service tax codes (Sloan & Vraciu, 1973). Investor owned system hospitals are a conglomerate of hospitals owned by a large investor, for example Humana, and are classified as for-profit or nonprofit (Sloan & Vraciu, 1973). Total investor owned hospitals operate for efficiency, specifically a ROI to all stakeholders, regardless of tax status (Pracht et al., 2018; Sloan & Vraciu, 1973).

Alternate classifications include for-profit, nonprofit, and public hospitals (Dalton & Warren, 2016). Public hospitals are government-owned entities that receive funding from redistribution of income from taxpayers (Dalton & Warren, 2016). Nonprofit hospital leaders face restrictions on funding resources; yet, they receive tax-exemptions (Dalton and Warren, 2016). For-profit hospitals leaders explicitly focus on increasing the ROI for shareholders (Dalton & Warren, 2016). Other variations in definitions include teaching and nonteaching hospitals (Gobillon & Milcent, 2016; Pauly & Redisch, 1973); however; the primary models within the literature are for-profit and nonprofit models (Pracht et al., 2018).

The first fully for-profit hospital entered the market in Nashville, Tennessee in the late 1960s and at that time, the system landscape evolved (Meyer, 2016). Following exponential growth in the hospital market in the 1980s and 1990s, 21.4% of hospitals were for-profit structure (Meyer, 2016). While patient care was the primary focus of nonprofit hospitals, the emergence of for-profit hospitals entrance into the market shifted the business practice focus toward operational efficiencies and scale economies (Brekke, Siciliani, & Straume, 2017; Fan, Hines, & Horwitz, 2016; Pracht et al., 2018).

During the first 30 years of the 1900s, hospital leaders funded capital constructions with resources from private donors (Wolfe, Woolhandler, & Himmelstein, 2018). The U.S. government also contributed to nonprofit hospitals capital investments after the Great Depression with the 1946 Hill-Burton program providing most of the funding (Wolfe et al., 2018; Yearby, 2015). Ideas about profit-based capital funding originated from industry controlled Blue Cross plans (Wolfe et al., 2018). Subsequently, capital-based funding in the hospital sector began when Blue Cross introduced per diem rates that paid hospitals for operating costs (Wolfe et al., 2018).

Two factors in the mid-1960s hastened a shift in nonprofit hospitals to a profit-margin operating base from grant funding:

1. 1963 Internal Revenue Service ruling allowing bond issues for capital construction,
2. Medicare adopted the Blue Cross philosophy and provided an added incentive for-profit allowances for investor owned firms (Wolfe et al., 2018).

In the 1970s, construction funding for new hospitals included approximately 70% debt and 30% from hospital reserves (Wolfe et al., 2018). Before the changes in the mid-1960s, public decision making guided new hospital construction; yet, thereafter profitability began to undercut which hospitals could expand (Wolfe et al., 2018; Yearby, 2015). With 86 rural hospitals closing in 2018 and the 44% remaining open reporting operating losses, there is a need for further investigation (U.S. Government Accountability Office, 2018).

Investigation of hospital ownership revealed how hospitals operate and what services are available (Bjorvatn, 2018). Deber (2002) analyzed the hospital market structure to address continued questions about investor owned firms competing in the Canadian healthcare system. Overarching themes within the hospital market structure literature included complications due to variations of services provided among firms and economic advantages from idiosyncratic market competition (Deber, 2002).

For-profit hospitals acquire profits through economies of scale and sound management practices; yet, the competitive nature within the industry includes the use of cream-skimming, adverse risk selection, and suspicious practices that increase the profit margins within the sector (Bjorvatn, 2018; Deber, 2002). Furthermore, investor owned hospitals specialize services, offer fewer services, and target low-cost patients (Bjorvatn, 2018). For-profit hospitals and nonprofit hospitals compete directly in the hospital market and their operational characteristics in the market appear opposite; yet, in the dynamic hospital sector there are for-profit hospitals that claim tax-exempt status (Cannon et al., 2018; Deber, 2002). Structural characteristics of the investor owned delivery in the hospital sector include a ROI to stakeholders although the tax filing status of taxable or tax-exempt determines the ability to accept charitable donations, funding resources, and payment of taxes. Characteristics of pure nonprofits include providing public service, special tax exemptions, use of volunteers, charitable contributions and grants, the motivation of multiple factors beyond the bottom-line performance measure, and potential for bankruptcy (Cannon et al., 2018; Deber, 2002). Evaluation of successful hospitals, regardless of tax status, includes delivered services, stakeholders who use the services, the impact of the services, the mix of resources used to provide the services, and the fiscal bottom line (Deber, 2002).

Leaders in for-profit and nonprofit sectors have different operating strategies due to the different missions of the firm that influence their profitability, in theory (Cannon et al., 2018; Freedman & Lin, 2018). Historically, general classification of a for-profit hospital included the leaders' focus on profit maximization, whereas nonprofit leaders seek to break-even (Cannon et al., 2018). However, the differences between for-profit and nonprofit are becoming harder to determine (Cannon et al., 2018; Wolfe et al., 2018). Although there is changing complexity within the definition of profit verses the tax status, hospital stakeholders expect a ROI (L. W. Burns et al., 2015; Cannon et al., 2018; Dubrovinsky & Winter, 2015). Stakeholders of nonprofit hospitals do not expect earnings because the primary focus of nonprofit hospitals is to provide a public service (Cannon et al., 2018; Deber, 2002).

The hospital industry is unique due to competing hospitals providing similar services through different ownership types and tax status with varying operational strategies (Eldenburg et al., 2017). Profitability arose as a benchmark for hospital sustainability and survival and the differences between nonprofits and for-profits started to fade (Deber, 2002; Wolfe et al., 2018). The idiosyncratic market environment and public policy decisions led to blurred distinctions between for-profits and nonprofits (Deber, 2002). There is a need for more stability in accountability requirements addressing flexibility and responsiveness within the changing system landscape (Deber, 2002).

### ***Profit-maximization.***

When profit is a key driver for both nonprofit and for-profit hospitals, the payer and service mix shift with leaders assigning performance measures that directly affect the quality of healthcare (Ly & Cutler, 2018; Wolfe et al., 2018). Distinct variation exists among hospital admission rates, especially about the characteristics of the individual hospitals and surrounding communities, eluding to the isodynamic environment of the competitive forces within hospital markets (Warner et al., 2018). Nonprofit hospital leaders are more likely to behave differently when faced with direct competition from for-profit hospitals, as nonprofit hospital leaders avoided unprofitable medical services when faced with direct competition from for-profit hospitals (Freedman & Lin, 2018). Additionally, nonprofit leaders also seek to avoid patients that do not increase profits in academic medical centers that exclude uninsured patients and send them to a separate clinic specifically for uninsured and Medicaid patients (Ly & Cutler, 2018; Wolfe et al., 2018). The renowned Mayo Clinic's leadership encourages prioritization of patients with private insurance over Medicaid and Medicare patients, which contributed to an operating surplus of \$707 million in 2017 (Wolfe et al., 2018).

When profit-centered services dominate hospital operating procedures, leaders explicitly promote medical services that are profitable and discourage medical services that do not produce a ROI (Ly & Cutler, 2018; Wolfe et al., 2018). Eldenburg et al. (2017) suggested leaders in for-profit hospitals should implement profit-maximizing strategies to adapt to changing market conditions faster than their counterparts change. Furthermore, government mandates, specifically the ACA, caused a shift in demand where health system leaders faced decreased demand for services that were once the foundation of profitable outcomes (Masterson, 2018).

When hospital leaders engage in profit-maximizing strategies, the consequence is lack of efficiency of patient care as well as encouraging corruption within the healthcare system market landscape (Ly & Cutler, 2018; Wolfe et al., 2018). Some for-profit hospitals managers engage in heinous and unethical practices that directly undermine overall healthcare system sustainability, whereas fraudulent billing practices have led to billions spent to settle claims (Wolfe et al., 2018). Controlling prices via government regulations without elimination of for-profit mentality could amplify profit-inflating behaviors by both nonprofit and for-profit hospitals (Ly & Cutler, 2018; Wolfe et al., 2018).

The behavior of hospital leaders is that of a prisoner's dilemma where leaders must anticipate the actions and reactions of the competitors in the market-place when determining competitive strategies (Colander, 2017). The emergence of for-profit hospitals within the industry encouraged nonprofit hospital leaders to engage in managerial activities that lead to increased operational efficiency and a ROI instead of only focusing on value (Meyer, 2016). Researchers argued the assumption that for-profit hospitals only operate for a ROI while quality declines; yet, for-profit leaders purchase failing nonprofits and make them profitable again or work in partnership with other nonprofit and for-profit hospitals within an integrated healthcare system (Dalton & Warren, 2016; Meyer, 2016). In comparison, for-profit hospital leaders are more likely to make strategic investment decisions based upon consumer demand, whereas nonprofit hospital leaders focuses primarily on supply (Chandra, Finkelstein, Sacarny, & Syverson, 2016; Dalton & Warren, 2016).

### ***Financial reporting.***

Increased profitability in hospitals is not associated to the diagnoses, the number of profitable services, or the payer mix (Ly & Cutler, 2018). Consequently, researchers seek to understand the implications of efficiency related to profitability (Guerrini, Romano, Campedelli, Moggi, & Leardini, 2018). Hospital financial performance includes the appraisal of regulations, standards, and effectiveness (Mohamed & Mwanoyota, 2018). The financial close process includes predefined inputs translated into predefined outputs; however, gaining access to the information needed to calculate and record the end of an accounting period is taxing (Javrin & Mascha, 2014). Stakeholders need fresh financial information to make better decisions (Kamalluarifin, 2018).

Javrin and Mascha (2014) contributed to research about the financial close process for the reasons of economic volatility, emerging regulations, weaknesses in internal control processes, and relevance of the accounting cycle closing to the internal health of the organization.



Three constructs with benchmarks established in prior literature include costs, quality control, and timeliness (Javrin & Mascha, 2014). Both internal and external stakeholders need fresh financial information to make the best investment decisions (Kamalluarifin, 2018). More research can help practitioners determine if the financial close process is efficient and effective given the nature of the need for time-sensitive information by management (Javrin & Mascha, 2014).

Greater transparency of data can lead to improved accuracy as required by laws and regulations (Javrin & Mascha, 2014). Furthermore, advances in technology can assist leaders in the preparation of financial records in a timelier manner (Javrin & Mascha, 2014). Janvrin and Watson (2017) studied the big data phenomenon and the implications of timely decision-making. Although the current inclusion of big data is changing the operating environment in financial accounting, the goal of accounting information is still the same: providing information to decision makers (Janvrin & Watson, 2017). Historically, accountants have dealt with substantial amounts of data; dating back to before the development of the double entry accounting system by Pacioli (Janvrin & Watson, 2017). Accountants have historically used emerging tools to decipher large amounts of data, including paper-based information and evolving technologically based information (Janvrin & Watson, 2017). Accountants use available methods to record, filter, summarize, and consolidate data to provide financial information to stakeholders (Janvrin & Watson, 2017). Further, auditors then examine the financial information for Generally Accepted Accounting Principles and other regulatory compliance (Janvrin & Watson, 2017). Stakeholders, specifically investors, lose faith in the quality of data when there is a delay in financial reporting as a delay is an indication of declining firm performance (Bartov & Konchitchki, 2017).

Stakeholders need timely financial information to make better decisions; yet, financial information is often delayed (Kamalluarifin, 2018; Rihter et al., 2017). Short-term delays, indicated by late quarterly reports filings, have valuation implications due to unaudited data (Bartov & Konchitchki, 2017). Long-term delays, indicated by late annual report filings, relate to inaccurate data in the short-term reporting. Furthermore, 49% of leaders report an average of 71-day reporting delays (Bartov & Konchitchki, 2017). A crucial aspect of a fast-financial close process includes the engagement of all business process functions (Rihter et al., 2017). Rihter et al. (2017) suggested that by viewing timely financial close process as an ultimate target, financial leaders focus upon the intermediate target of the flow of business process mechanisms that can improve and further contribute to the timeliness of information release. Leaders attribute the operational accounting procedures as the primary reason for delays in financial reporting (Bartov & Konchitchki, 2017; Fay & Negangard, 2017). Financial reporting delays attributed to operational accounting procedures signal deeper problems, especially since the data in late filings are likely unaudited (Bartov & Konchitchki, 2017). Consequences of late filings include increased stock trading costs and penalties from regulatory agencies which attribute to reduced earnings for shareholders (Bartov & Konchitchki, 2017). Traditional financial reporting is less effective than instantaneous delivery that removes time constrictions and paper-based associated costs (Al-Sartawi, 2018). The factors that influence online financial reporting include profitability, firm size, leverage, capital adequacy, return on assets, auditor type, industry, board size, and ownership diffusion (Al-Sartawi, 2018).

### **10. 12 Big data.**

The era of big data is emerging, as in every 48 hours of accumulated data today is equivalent to the amount of data acquired from the beginning of civilizations to 2003 (McKinney, Yoos, & Snead, 2017). Big data is the three V's of high volume, high velocity, or high variety information (Janvrin & Watson, 2017). Big data business intelligence information is changing the system landscape because stakeholders seek more cost-effective and current information processing that can lead to better business decisions (Janvrin & Watson, 2017). Specifically, accountants must be able to not only conduct operational accounting procedures, but also handle the current and emerging technologies in the global business environment and present data in a timely fashion (Janvrin & Watson, 2017). When properly utilized, business intelligence collection includes browsing preferences, website views, website clicks, environmental factors, and social media trends (Fay & Negangard, 2017). This information provides insight into the customer and trickles down to the overall profitability of the firm (Fay & Negangard, 2017).

However, when there is a delay in financial reporting it is problematic because stakeholders, specifically investors, desire fresh financial data (Kamalluarifin, 2018). Delayed financial data release by financial leaders sends a message of inefficiency along with disregard for the desires of stakeholders (Kamalluarifin, 2018). Traditional accounting methods are the choice when there should be a nontraditional approach to addressing the implications of big data (McKinney et al., 2017). Hence, as financial leaders balance the traditional and nontraditional methods, there are likely delays in financial reporting due to inefficiency along with restatements of financial data (McKinney et al., 2017).

Big data is changing business instantaneously and is contributing to global economic system growth (McKinney et al., 2017). Veracity and value are important measures of the dynamic information changes (Janvrin & Watson, 2017). Veracity is data reliability, whereas value is associated with the cost-benefit of data collection (Janvrin & Watson, 2017). Although veracity and value have been of focus since the adoption of enterprise resource systems in the early 1990s, many researchers believe that some aspects of the big data information is collected and it is not being utilized as an asset to the firm (Janvrin & Watson, 2017). Recognizing the changing information dynamics, the American Institute of Certified Public Accountants and the American Accounting Association suggest accounting education must change to incorporate transformational learning to train future accountants for the dynamic changes taking place within the profession (Janvrin & Watson, 2017).

Fragmented literature exists about hospital profitability with major themes in the literature including studies about efficiency, regulatory practices, and quality across many disciplines both domestically and internationally (Barns & Harp, 2018; Cannon et al., 2018; Dalton & Warren, 2016; Gobillon & Milcent, 2016; Pracht et al., 2018). Current efficiency studies include assessment of environmental factors related to costs (Brekke et al., 2017; Fan et al., 2016; Guerrini et al., 2018; Pracht et al., 2018; Warner et al., 2018). Scholars studied regulatory practices related to subsidies, mandates, and earnings management (Bjorvatn, 2018; Cannon et al., 2018; Wolfe et al., 2018). Finally, researchers investigated quality through performance measurements, patient quality of life, overall healthcare system quality, and evolving big data changes in healthcare services landscape (Bjorvatn, 2018; Brekke et al., 2017; Deber, 2002; Janvrin & Watson, 2017; McKinney et al., 2017; Rihter et al., 2017; Wolfe et al., 2018).

### **10.13 Hospital studies.**

There is a lack of prior research on hospital ownership implications; hence, assessment of hospital efficiency is fundamental to investigating determinants of hospital performance (Guerrini et al., 2018). Guerrini et al. (2018) used a case study with a mixed method analysis incorporating a two-stage data envelopment analysis to explore effects of hospital ownership and a three-stage data envelopment analysis to account for external environmental factors. Length of hospital stay and overcapacity both decreased efficiency; yet, contributed to profitability (Guerrini et al., 2018). Throughout a systematic review of the literature, researchers also studied hospital efficiency incorporating factors of ownership, facility size, organizational choices (Guerrini et al., 2018).

A multivariate analysis of emergency department (ED) admissions revealed more than half of hospital admissions begin in the ED, with distinct variations existing among ED admission rates, including characteristics of individual hospitals and surrounding communities (Warner et al., 2018). Higher admissions from the ED contribute to profitability; yet, there is no clear evidence that for-profit hospitals achieve higher efficiency levels than nonprofits (Warner et al., 2018). Both research studies include calls for more research to understand how environmental factors contribute to hospital and healthcare system efficiency (Guerrini et al., 2018; Warner et al., 2018).

While 72.6% of patient admissions were to nonprofit hospitals, 13.5% and 13.9% of admissions were to patients at public government-owned and for-profit hospitals respectively (Aplin et al., 2015). The average cost per day in 2015 by hospital ownership status includes \$2,413 in nonprofits, \$1,831 in for-profit, and \$2,013 for government-owned hospitals (Ellison & Cohen, 2018). Although income varies among hospitals status, hospital financial leaders face increasing costs leading to decreased profit margins overall (Lovelace, 2018). However, patients at for-profit hospitals paid approximately \$12,000 more than patients at public and government-owned hospitals (Aplin et al., 2015). Early discharge of patients at lower cost hospitals leads to higher costs overall due to patient readmission (Aplin et al., 2015).

Both nonprofit and for-profit hospitals faced increasing overall costs attributed to the intensifying inclusive costs of healthcare within the system (Park et al., 2015; Schmitt, 2018; Westra, Angeli, Jatautaite, Carree, & Ruwaard, 2016). Patients experienced higher costs when hospital managers raised the prices for services in response to the lower negotiated reimbursement rates within the third-party payer insurance system (Park et al., 2015). Media attention about the high costs in hospitals led to the discovery of variable consumer prices for services not only between geographic locations but also within the same geographic locations; consequently, an exhaustive price list for services does not exist (Park et al., 2015). Higher labor costs and lower reimbursements from within the payer mix directly contribute to decreased operating margins overall, with hospitals facing the worst profitability scenarios since the Great Recession (Lovelace, 2018).

The idiosyncratic market structure within the hospital sector, including the different missions for each form of hospital ownership, require analysis of operating margins to allow investigation of financial comparison among hospitals.

A Navigant study revealed for-profit and nonprofit hospitals operating margins decreased 39% between fiscal years 2015 and 2017 (Masterson, 2018). Furthermore, 27% of hospitals lost money during the 3-year study, which contributed to 11% with negative margins. Between 2013 and 2017, 64 rural hospitals closed due to financial implications, which is double the number in the previous 5 years as reported by the U.S. Government Accountability Office (2018). Financial analysts at Moody's Investor Services believe all hospitals are facing cash gaps as well as grim outlooks for improved operational performance (Lovelace, 2018).

#### **10.14 Social, cultural, and political factors.**

Government leaders attempt to influence the competition within the unique hospital market through competitive measures, regulations, and subsidies. However, the results are mixed, at best. Mergers among hospitals contribute to the institutional and behavioral idiosyncrasies within the market landscape and occur widely throughout the literature (Brekke et al., 2017; Chandra et al., 2016; Gowrisankaran, Nevo, & Town, 2015). Mergers and acquisitions in the first quarter of 2018 are the second highest recorded in 10 years, with for-profit divestitures accounting for 44% of the 36 announced transactions (Daly, 2018). Industry experts revealed more consolidation is likely to occur within the hospital sector due to increasing payment issues and ongoing wage and supply inflation, while business leaders seek operating efficiency (Daly, 2018).

The complex competitive nature of the hospital industry includes monopoly market power for hospitals (Chandra et al., 2016; Gowrisankaran et al., 2015; Moriya, Vogt, & Gaynor, 2010; E. T. Roberts, Chernew, & McWilliams, 2017). Although governments typically regulate anti-competitive behavior, the structure within the industry coincides with scale economies mixed with social, cultural, and political issues that directly influence the different entities (Park et al., 2015; Schmitt, 2018; Sloan & Vraciu, 1983; Westra et al., 2016). Studies support the need for more research to understand the social, political, and cultural issues related to the gap between cost and expenditure measures within the idiosyncratic market structure (Ronen et al., 2018).

Researchers study accountable care organizations as defined through the Centers of Medicaid and Medicare Services (Chukmaitov et al., 2019). The lack of financial rewards and reimbursements for new services deterred hospitals from investing in additional capital (Chukmaitov et al., 2019). Using an analysis of the literature and qualitative interviews, scholars investigated healthcare reform from the perspective of state-level government interventions, specifically the evolution of the all-payer claims databases used by stakeholders to address health policy pricing problems (Rocco, Kelly, Beland, & Kinane, 2017).

Researchers of existing literature revealed the failures of older regulatory frameworks and the inability to account for shifts in ideologies, interests, and institutions as the key limitations within the landscape (Rocco et al., 2017). Furthermore, researchers claim wide-spread price discrimination practices occur within the industry (Rocco et al., 2017). Because of the accountable care organization impact and the state level regulations with variations in views on public policy with prices likely to increase over time, there is a need for more research to understand the structured operational processes involved with shifts in high volume to high quality within business model context (Chukmaitov et al., 2019; Rocco et al., 2017).

Government leaders attempt to influence the competitive nature in the hospital system through subsidies. Researchers first studied hospital capacity planning decisions related to the subsidies involved with the disproportionate share hospital (DSH) program available as part of the Medicare government intervention (Barnes & Harp, 2018). The goals of the DSH subsidy program include the use of a prospective payment system to encourage hospital leaders to control costs as well as make capital investments as they would within a classical competitive market (Barnes & Harp, 2018). The DSH policy initiative encourages hospitals to have 100 beds to increase the supply of hospital services, however; the reality is larger hospitals are more likely to invest in additional beds than smaller hospitals (Barnes & Harp, 2018). The additional capital outlay costs outweigh the potential benefits of an estimated \$900,000 revenue stream; yet, for-profit hospitals are more likely to take advantage of the subsidy because of the institutional philosophies governing the objectives of the firm (Barnes & Harp, 2018). In another study about subsidies, accounting scholars argue the appropriations in the ACA influence earnings management practices (Cannon et al., 2018). To investigate the differences in operational accounting procedures used in the hospital sector, researchers gathered data from 50 states and the District of Columbia for a 6-year period; 3 years prior and 3 years after ACA implementation (Cannon et al., 2018). For-profit hospital managers reported lower earnings achieved through income-decreasing earnings management practices, as a way to continue to receive subsidies like the DSH, whereas nonprofit hospital managers attempt to maintain expected profits (Cannon et al., 2018).

Mandates included in the ACA placed pressure on financial managers to report lower earnings due to the increase in earnings and potential for scrutiny within the legislation (Cannon et al., 2018). In both studies, there is a need for more research to investigate the government interventions in the idiosyncratic hospital market, as the interventions did not level competition in the landscape but instead increased complexity.

### **10.15 Alternative healthcare systems.**

The market structure of the hospital industry is competitively unique, whereas scholars argue the healthcare system could benefit from a single-payer reform with a focus on the quality of care (Wolfe et al., 2018). Wolfe et al. (2018) suggested future reforms include payment to hospitals in lump-sum form for operating budgets, restrictions on money not spent on direct patient care, and allocation of capital funding by government grant programs. There are 10 underlying factors contributing to the dysfunction in the overall U.S. healthcare system: more treatment is better than less treatment, lifetime treatment is preferred over cures, marketing and amenities are more important than quality of care, aging technologies create diseconomies of scale, more competition increases prices, there is no free choice, economies of scale do not reduce costs of medical care, fixed prices are nonexistent, there is no standard regarding billing practices, and prices will rise and continue to rise in the complex market structure (E. Rosenthal, 2017). Analysis of these attributes as well as the comparison to a single-payer system could be the starting point for overhauling the U.S. healthcare system (E. Rosenthal, 2017; Wolfe et al., 2018).

### **10.16 Quality of care.**

Another theme discovered within the fragmented literature includes issues of quality within the hospital market. Bjorvatn (2018) was the first to investigate hospital ownership and the quality of care in Norway by using an econometric analysis of cardiovascular procedures. Although there is extensive literature about how varying payer systems contribute to efficiency, hospital administrators utilized an analysis of pricing practices to contain costs below reimbursement rates, and those practices lead to early discharges, readmissions, and increased mortality (Bjorvatn, 2018). Similarly, examiners investigated nurses in Australia using a qualitative study on the effects of organizational changes of increased reporting, limited resources, and competing priorities on the quality of treatment of pressure-related injuries perceived as poor-quality nursing care (Barakat-Johnson, Lai, Wand, & White, 2018).

Because pressure injuries negatively affect the quality of life of patients as well as increase the length of hospital stays, there is a need for more research to understand the implications of these constraints on the impact of overall healthcare costs relative to limited resources and cost reduction goals of the organization (Barakat-Johnson et al., 2018). Furthermore, researchers studied discharge delays with a mixed-method systematic review of prior literature from the perspective of patients and hospital professionals as well as the related impact to costs and patient outcomes (Rojas-García et al., 2018). Discharge delays correlated to mortality, infections, depression, and mobility reductions; all contributing to an overall decrease of life quality (Rojas-García et al., 2018). The consequences of a longer length of stays include pressures to reduce discharge delays with implications on quality of care (Rojas-García et al., 2018). Scholars argue there is a need for more holistic research to understand the operating processes of reducing delays in discharge (Rojas-García et al., 2018).

Freedman and Lin (2018) studied innovative EMR adoption patterns among for-profit and nonprofit hospitals. Developers of EMR systems suggest information systems improve the quality and efficiency of healthcare services (Freedman & Lin, 2018). However, the results are mixed. Research exposed for-profit hospital leaders are less likely to invest in EMR systems due to the expense and uncertainty, whereas as nonprofit hospital leaders are more likely to invest in EMR systems because of their mission for social welfare (Freedman & Lin, 2018). Examiners also systematically reviewed qualitative literature pertinent to below-average patient outcomes or quality of care metrics (Vaugh et al., 2018). Thirty-three studies contained a diverse range of qualitative interviews and results included five domains of struggling healthcare organizations: poor organizational culture, inadequate infrastructure, lack of a consistent mission, system shocks, and dysfunctional external relationships with stakeholders (Vaugh et al., 2018). A potential limitation of the study is the inclusion of low-quality methodology studies among high-quality studies (Vaugh et al., 2018).

Although quality varies less within tax-exempt firms, the operational strategies in for-profit firms result in economies of scale and profit maximization (L. W. Burns et al., 2015; Dubrovinsky & Winter, 2015). There is a perception that leaders of for-profit hospitals sacrifice quality of care in exchange for profits while competing within the entire healthcare system (Besley & Malcomson, 2018). Charges among patients in nonprofit hospitals were 24.5% lower per day; yet, the length of stay was shorter by approximately 1.94 days at for-profit hospitals (S. J. Kim, Park, Kim, Yoo, & Lee, 2015).

## 10.17 Integrated Health System Trajectory

Although variations of for-profit, nonprofit, and public hospitals compete within the industry, researchers suggest future trends contain a trajectory of an integrated public health system associated with increased provider accountability and increased impact on quality and cost (L. R. Burns & Pauly, 2018; Gobillon & Milcent, 2016). Hospital leaders in the Netherlands engage in specialist sharing, as a medical specialist may work for or affiliate with multiple hospital facilities (Westra et al., 2016). Researchers also studied the effects of physician practice acquisitions by hospital administrators using publicly restricted data for years 2007 through 2013 (Capps, Dranove, & Ody, 2018). Scholars discovered an average of 14.1% price increase on physician services once physicians become part of a larger facility (Capps et al., 2018).

Approximately 45% of the price increases relate to exploitation of reimbursement rules categorized as facility fees charged by hospitals (Capps et al., 2018). The additional fees contribute to the increasing costs within the overall healthcare system (Capps et al., 2018). There is not a public list of prices available for analysis and the results of both studies may not be generalizable (Capps et al., 2018; Westra et al., 2016). However, trends projected by researchers may reflect the transitioning hospital landscape congruent with increasing costs.

### ***Business.***

The private sector of the healthcare economic system is business, which is any organization that produces units for consumption by households and governments (L. R. Miller & Benjamin, 2018). There are three primary categories of businesses: sole proprietor, partnerships, and corporations (Colander, 2017). A sole proprietor is an individual who engages in various entrepreneurial market activity in return for a profit (Colander, 2017; L. R. Miller & Benjamin, 2018).

There are diverse sole proprietor entrepreneurs related to the supply of labor and the healthcare economic system. For example, neoliberal policies in Chile discourage entrepreneurship due to the disparity between public healthcare serving the poor and private healthcare serving the wealthy (Rotarou & Sakellariou, 2017). Whereas the passage of the Urban Resident Basic Medical Insurance program in China contributed to an increase in entrepreneurship by 5.4% by deterring job-lock due to alternate health insurance options (Liu & Zhang, 2016). The passage of the ACA in the United States also addressed job-lock and led to increased entrepreneurship participation among disabled young adults by approximately 20% (Bailey, 2017).

Other forms of businesses beyond entrepreneurship include partnerships and corporations (Colander, 2017). Partnerships occur when two or more sole proprietors enter into a joint venture to provide products and services (Colander, 2017). Partnerships in the healthcare system include medical practices staffed with licensed osteopathic and medical doctors, and often include the physicians in a leadership role (Fassiotto, Maldonado, & Hopkins, 2018).

### ***Integrated healthcare system.***

With rising healthcare costs, sole proprietors and partnerships face evolving business roles in the healthcare system. Rudnicki et al. (2015) revealed the rapid changes taking place in the health systems should lead to transitions for surgeons from private practice facilities into an integrated health system approach which increases efficiency and value to the overall healthcare system. Chiropractors who worked in integrated health centers reported approximately 60% of spinal manipulations were part of a unified healthcare plan for the patient, which also included coordinated care by osteopathic and medical physicians, physical therapists, chiropractors, and pain management physicians (Salsbury, Goertz, Twist, & Lisi, 2018). Casalino et al. (2016) discovered U.S. physicians spend over \$15 billion a year on the reporting of quality alone. Both Emanuel (2018) and Kirch and Petelle (2017) found that shortages of primary care physicians are common due to increased costs and dynamic complexities, which led researchers Giddon, Donoff, Edwards, and Goldblatt (2017) to investigate if dentists could provide limited primary care services as part of an integrated healthcare system approach. Beyond sole proprietors and partnerships, corporations operate within the healthcare system.

A corporation is a separate legal entity where leadership seeks to provide ROI to shareholders (Colander, 2017). The primary corporations influencing the healthcare system economy includes health insurance companies, pharmaceutical companies, and hospitals. Through a brief analysis of health insurance and pharmaceutical companies, I provide background for the diverse operating environment. I then provide detailed specific focus on hospitals to demonstrate the significant operational business system problem.

### ***Third party payer market.***

The health insurance market in the United States is a third-party payer market where the insurance companies negotiate prices with the medical service providers on behalf of the insurance policy owner (Colander, 2017; Dickman et al., 2017). The owner of the insurance policy is the third party since it is the third party that pays the negotiated price in the form of copay or deductible (Colander, 2017; Dickman et al., 2017). Before the ACA, health insurers engaged in discriminatory pricing practices that included denial for preexisting conditions, annual and lifetime payment caps, and charging different ages and genders different rates (Gaffney & McCormick, 2017).

Although the ACA legislation included addressing predatory and discriminatory pricing, the financing of medical care in the United States occurs within a complex network of public and private insurance programs (Dickman et al., 2017). Consequently, the big five insurers Aetna, Anthem, Cigna, Humana, and United Healthcare received 59% of their income from the U.S. government (Himmelstein et al., 2018). Furthermore, monopsony conditions occur within the industry creating bargaining power by insurance company size alone (Moriya et al., 2010).

Social, cultural, and political realities enhance the complexity of the health insurance sector. First, state legislators created and passed laws prohibiting abortions that pertain specifically to women, which supersede the federal mandate (Buchmueller & Valletta, 2017). Second, if the ACA is overturned employer-sponsored healthcare likely will remain, but access to healthcare for many Americans would be uncertain (Buchmueller, & Valletta, 2017). Third, researchers and social change visionaries called for comprehensive universal healthcare coverage without cost sharing provided by the insurers (Gaffney & McCormick, 2017). Fourth, the complexity of the healthcare financing in the United States is regressive, which only redistributes the payer mix (Dickman et al., 2017).

### ***Households***

Households interact with the healthcare system in different ways than the government and business; yet, they are the most powerful group because they vote for government officials and interact with business (Colander, 2017; Jakovljevic & Ogura, 2016). Members of households use the services of the healthcare system as well as provide a labor source to the various health facilities (Colander, 2017; L. R. Miller & Benjamin, 2018). Over the past decade, the supply of labor and the overall health of workers from households declined (French & Jones, 2017). Workers with more education stay in the workforce 7 to 8 years longer than workers without a college degree (Auerbach et al., 2017). Adding complexity is the need for health literacy, where individuals have the skills, abilities, and knowledge to understand, access, and use the information to make better health decisions (Trezona, Dodson, & Osborne, 2017). Batterham et al. (2016) developed a model in health literacy that directly improves health services and reduces health system inequalities.

The cost of healthcare is exceedingly skewed for households in the United States and abroad. In the Netherlands, individuals with lower incomes face the highest medical costs (Bakx, O'Donnell, & Van Doorslaer, 2016). Hospital admissions costs alone led to approximately five percent of bankruptcies in the United States (Dobkin, Finkelstein, Kluender, & Notowidigdo, 2018). Conversely, household members with access to health insurance at a younger age view health as an investment and stay in the workforce longer because they are healthier as well as have lower expenditures related to health issues (Pelgrin & St-Armour, 2016).

Health of households and labor participation. The health of workers affects the level of employment and number of hours worked (French & Jones, 2017). As workers age, health commonly declines because of health shocks and chronic conditions that affect the physical abilities to work (Dickman et al., 2017). The health of individuals aged 55 to 70 decline approximately 17%, whereas 74% of the workers choose to retire (French & Jones, 2017). Furthermore, bad health leads to a decline in wages (Capatina, 2015; Pelgrin & St-Armour, 2016). Workers without a college education earn 19% fewer wages for average health and 36% fewer wages for poor health (Capatina, 2015). Workers with a college education with average and poor health, earn 14% and 28% fewer wages respectively (Capatina, 2017). Although declining health directly diminishes the supply of labor, it is not the only reason workers leave the labor force (Karabarbounis, 2016). As workers get closer to retirement age, workers gain access to previously illiquid assets and pensions, causing their incentive to work to decline (French & Jones, 2017). Workers' reasons for leaving the workforce for health issues include the preference to work or not work, lower productivity, shorter life expectancy, and access to healthcare (Capatina, 2016; French & Jones, 2017; Karabarbounis, 2016). French and Jones (2017) believe that disability insurance benefits are an additional factor influencing labor participation rates.

The healthcare system landscape in the United States comprises unique complexities for all stakeholders (Arnaboldi, 2018; Deber, 2002; Brekke et al., 2017; Eldenburg et al., 2017).

Government leaders attempt to increase the quality of care in the hospital market through intervention (Wolfe et al., 2018). However, the for-profit and nonprofit hospitals operate under opposite missions, leading to differing views on profit and public good centered care (Cannon et al., 2018; Deber, 2002). The idiosyncratic market characteristics create complexity within the landscape, warranting further investigation due to the existing gaps within the literature (Hallam et al., 2018; Mohamed & Mwanoyota, 2018; Ronen et al., 2018). The following section provides the conceptual framework used to investigate the applied business problem.

After a review of the U.S. healthcare system, market structure, and financial performance with big data implications, the TOC and PI conceptual frameworks provide a way to investigate the hospital's goals of a ROI with focus on quality and efficiency. Therefore, investigating the operational procedures involved in the compilation of financial information, including timeliness, helps business leaders understand and apply decision making for competitive advantage.

## 11 Role of the Researcher

The role of a qualitative researcher is to serve as the principal instrument of the data collection process (Symon, Cassell, & Johnson, 2018). Researchers must maintain stringent compliance to ethical procedures as well as provide transparency (Symon et al., 2018; Tate et al., 2016). I interviewed and audio recorded participants in face-to-face interviews, transcribed the audio recording using Microsoft Word, uploaded files to ATLAS.ti software, coded each sentence, identified themes and patterns, and drew conclusions from the data. I used transparency factors of quality, including interview planning and groundwork, precise note taking, and manual code development, to be thorough in investigation of data.

The role of the researcher also includes disclosure of associations, preconceptions in investigation, previous involvements, and unambiguous principles (Tate et al., 2016). I lived near the geographic location of the hospital for 16 years. I was not familiar with their information system or data mining process. I have academic and real-world experience in the discipline of business and taught economics, accounting, information systems, and statistics at the undergraduate level for 22 years, focusing on basic theory and current events. For 9.5 years, I was co-owner of a small media services business and witnessed firsthand the demands upon entrepreneurs. I was able to alleviate my preconceptions because of my academic and personal experiences.

I reduced bias in this study by bracketing. Bracketing includes the separation of personal experiences, perceptions, morals, and beliefs from the research data (Pereira, 2012; Tufford & Newman, 2012). I documented my perceptions by keeping a detailed journal and mitigated personal bias by taking detailed records of data collection, data analysis, and data reported. By incorporating journalization, I remained objective while continuing to be aware of potential bias. Journalization allows the researcher to focus on the holistic view of the phenomenon with transparency; therefore, obtaining accurate constructs of the research participants' unique perceptions was my focus (see Lewis, 2015; Tufford & Newman, 2012).

Researchers should observe ethical research standards, especially research involving human participation (Kaufmann & O'Rourke, 2015). Risks to the research participants greatly diminish when recognizing and preserving the dignity, rights, safety, and well-being of the protected participants (Hardicre, 2014; Lange, Rogers, & Dodds, 2013). Ethical practices include obtaining informed consent, protection of the participants' rights to privacy, insurance of confidentiality, and maintenance of honesty while collaborating with professional associates (Morse & Coulehan, 2015).

I adhered to the ethical guidelines and approaches provided in The Belmont Report and Walden University's Institutional Review Board (IRB) throughout the study. The Belmont Report contains explicit ethical processes and techniques that protect personal individuality, while incorporating principles of goodness and justice, informed consent, benefits and risks, and purposeful sampling selection (Perrault & Nazione, 2016; U.S. Department of Health and Human Services, 1979). The selected participants in the study were not vulnerable, and each participant electronically verified consent as I requested in the consent form. Before beginning the interview with each participant, I confirmed receipt of electronic confirmation via e-mail and asked participants if they had questions.

The interview protocol is an essential part of the interview process (Castillo-Montoya, 2016; Perrault & Nazione, 2016). The interview protocol (see Appendix) in this study included a detailed data collection protocol, data collection tools, interview questions, and an outline of the case study report. The benefits of using an interview protocol include a well-planned interview process (Castillo-Montoya, 2016), adherence to ethical protocols, and the collection of relevant data (Wallace & Sheldon, 2015).

### 11.1. Participants

The participants in this study included financial leaders who provided insight into the comprehensive details surrounding the complex phenomenon of PI (see Bernard, 2017). I purposely selected research participants that had experience with PI as this directly contributed to research reliability. The participant eligibility requirements included (a) knowledge of the phenomena, (b) experience in the evolution of the business case for PI, (c) engagement with stakeholder responsibility for cost reduction, and (d) experience in working with people to employ organizational change. The eligibility criteria for the selection of participants in this study were financial leaders who possessed knowledge about the financial close process and worked at a hospital.

The IRB provides the guidelines for gaining access to participants and for maintaining ethical standards (Kaufmann & O'Rourke, 2015; Porter et al., 2017). The IRB at Walden University provided ultimate permission for this research study, including explicit ethical guidelines. The ethical guidelines of the study included informing the participants of the clear objectives, benefits, risks, and discretion of the study in a transparent manner, as outlined by Porter et al. (2017) and L. D. Roberts (2015). The IRB approval number for this study was 04-18-19-0322977, and this approval expires April 17, 2020. After receiving IRB approval, I contacted over 25 financial leaders using e-mail, as outlined in the interview protocol. After receiving consent from the participants, I assessed their eligibility by compiling a list of potential participants and reviewing their role and responsibility within the organization to provide alignment throughout the research for purposeful sampling. Participants in this study engaged in PI.

I purposefully selected five financial leaders at the same hospital to participate in the study. Professional networking and interaction were used to make contacts as a means to build a foundation for an effective relationship. Trust within the relationship is essential to the behavioral aspects of research (van Delden & van der Graaf, 2017; Wallace & Sheldon, 2015; Yoon, 2017). I communicated clearly, set appointments, and explained the underlying goals of the study. Effective communication in a candid environment with the research participants contributed to their understanding the need for the quality research and enabled them to vest interest in the study, prepare for an audio-recorded interview with open-ended questions, and understand the value of sharing information about holistic systems experiences (see Corbin and Strauss, 2015).

## 12 Research Method and Design

Qualitative, quantitative, and mixed method are the three types of research methods (Guetterman, Fetters, & Creswell, 2015). Researchers must consider the research problem and research questions when determining the most applicable research methodology for purposes of alignment (Guetterman et al., 2015; McCusker & Gunaydin, 2015). Because the goal of this study was to explore how financial leaders can make more efficient, effective, and strategic business decisions through systematic PI initiatives, a qualitative case study was the most appropriate research method.

### 12.1 Research Method

In this study, I employed the qualitative method. Qualitative research encompasses the complexity of human interactions through a holistic framework (Corbin & Strauss, 2015). Due to the complex nature of human interactions, subjectivity, and other theories used to understand phenomena, qualitative research is appropriate for use in the applied social sciences of anthropology, business, political science, and psychology (Lewis, 2015). Qualitative research is an appropriate methodology for investigating the complexity of applied research problems with unknown variables (Colorafi & Evans, 2016; McCusker & Gunaydin, 2015). Qualitative research includes identifying the problem, data collection, data analysis, and data interpretation to establish research validity (Yap & Webber, 2015). Data sources in qualitative research include documents, interviews, observations, and surveys (Corbin & Strauss, 2015; Sutton & Austin, 2015). The methods employed in a qualitative study are the means to describe the foundations and insights of the participants; hence, the results include a holistic representation of the participants' experiences related to the specific phenomena (Lewis, 2015).

Because the goal of this study was to explore the essence of a systematic process, the qualitative method was appropriate, according to Lewis (2015). A quantitative method was not appropriate for the study because quantitative research is used to determine if there is an interrelationship between explicitly defined direct and indirect variables (see Guetterman et al., 2015; McCusker & Gunaydin, 2015). Quantitative studies include the use of quantifiable variables within hypothesis testing to explore the correlations and associations between variables (Guetterman et al., 2015; McCusker & Gunaydin, 2015). The qualitative method includes approaches to investigate the hows and whys of specifically designed research questions (Corbin & Strauss, 2015; Joslin & Müller, 2016). Therefore, a qualitative inquiry was the most appropriate method to answer the research question of this study (see Pihlajamaa, Kaipia, Säilä, & Tanskanen, 2017).



A mixed-method research approach was not appropriate for the study. Mixed-method research includes the triangulation of data both quantitatively and qualitatively (Guetterman et al., 2015). Furthermore, mixed-method research entails a complex lengthy research project (Joslin & Müller, 2016; Palinkas et al., 2015). I did not choose a mixed-method approach for the study because of time constraints and the inability to investigate the hows and whys of the research question using a quantitative approach.

## 12.2 Research Design

A case study design was the most appropriate methodological design for this study (see Yazan, 2015). Other methodological designs include phenomenology, ethnography, narrative, and grounded theory (Yazan, 2015). A case study design, whether multiple or single, is bound by the constraints of time and location and is best suited for answering research questions that require in-depth investigation of a complex system process (Houghton, Murphy, Shaw, & Casey, 2015). Case study researchers investigate specific events by limiting focus on individuals, processes, and systems (Yin, 2018). Because the goal of this study was to explore problems inside the workplace environment with a TOC and PI framework, the case study design was the most appropriate methodology for the study, as recommended by Symon et al. (2018) and Yazan (2015).

Case studies are collective, intrinsic, single instrumental, or single or multiple cases (Yin, 2018). Qualitative case study designs include an in-depth exploration of issues or problems of a participant or group during a specific point in time (Houghton et al., 2015; Yin, 2018). Collective study researchers focus on an issue by utilizing multiple cases (Yin, 2018). Intrinsic studies include focusing on a single social setting due to unique research conditions (Tinkler, Smith, Yiannakou, & Robinson, 2018; Yin, 2018). Single instrumental case studies include exploration of one issue within a single bounded case (Yin, 2018). Multiple case studies include studying a phenomenon with a focus on multiple, related, constraining factors formatted as cases; hence, multiple case studies require analysis among the results of many cases (Pihlajamaa et al., 2017; Ridde, Yaogo, Zongo, Somé, & Turcotte-Tremblay, 2018). The single case study involves investigating a phenomenon from the perspective of a single incident (see Yin, 2018), making it the most appropriate design for this research study.

Phenomenology, ethnography, narrative, or grounded theory design was not appropriate for this study. Researchers seek to understand the lived experiences of the participants in phenomenological design (Alfakhri, Harness, Nicholson, & Harness, 2018; K. A. Burns et al., 2018; Levitt, Motulsky, Wertz, Morrow, & Ponterotto, 2017). Phenomenological design includes the collection of rich data in order to gain an understanding of lived experiences of the participants to answer the research question (K. A. Burns et al., 2018). Phenomenology is appropriate to use when scholars seek to define and understand phenomena to create meaning; however, phenomenology is not the most applicable to exploring the implementation of PI strategies (see Valizadeh, Borimnejad, Rahmani, Gholizadeh, & Shahbazi, 2016). Therefore, I did not choose phenomenology for this study.

Researchers using ethnographic design include investigation of a specific group and culture (Comi & Whyte, 2018). Ethnographic design, which has roots in anthropology, includes an examination of the social and cultural aspects of a phenomenon (Kassan et al., 2018). Researchers exploring culture must have intensive contact with group members to gain an understanding of the cultural implications as part of a shared system (Kassan et al., 2018). Ethnographic researchers seek a holistic account of social issues to define, link, and explore complex societal phenomenon (Alyahya, Hijazi, Al Qudah, AlShyab, & AlKhalidi, 2018; Jamas & Olausson, 2018). Furthermore, multiple data collection methods, including the use of visual artifacts, are common in ethnographic design (Comi & Whyte, 2018; Jamas & Olausson, 2018). An ethnographic design was not suitable for exploring the research question designed for this study.

Researchers using narrative design investigate the story, interpret the story, and disclose events or series of events in order to gain a holistic understanding of the life of the participants (Lewis, 2015; Pickup, Holloway, & Samsi, 2015). The focus of narrative inquiry is to study combined and isolated surroundings, establish the meaning of the experience(s), and express the experience and life experiences of the participants in the research project results (Pickup et al., 2015). Researchers use narrative inquiry to magnify the opinions of research participants who might otherwise be silent or overlooked (C. C. Wang & Geale, 2015). Because the narrative approach requires researchers to use multiple sources of data to present the research results as a holistic story of a lived experience (C. C. Wang & Geale, 2015), data sources are commonly unstructured (Morse & Coulehan, 2015). Furthermore, a narrative inquiry has roots in teaching and learning (Nolan, Hendricks, Williamson, & Ferguson, 2018).

Because narrative inquiry explores all aspects of the participants' lives, including exploration of the complexities and intricacies of human experiences (see Nolan et al., 2018), a narrative design was not appropriate for the investigation of PI systems change in this study.

Grounded theory involves the methodical classification of interconnected accounts gathered through data collection and researchers use grounded theory to advance theory development (Charmaz, 2017; Foley & Timonen, 2015; Holt et al., 2017; Lewis, 2015). With historical roots of grounded theory found in sociology and health sciences, researchers use extensive data collection and analysis techniques to substantiate the theoretical significance of results (Charmaz, 2017; Locke, 2015). Sample sizes in grounded theory research include theoretically developed sample sizes based on concepts or categories (Foley & Timonen, 2015; Johnson, 2015). Researchers use interpretative research and analysis skills to explain theory development and theory advancement (Gehman et al., 2017; Holt et al., 2017). Furthermore, grounded theory research studies include models for continued relevant research (Charmaz, 2017). Grounded theory was not applicable to this study. The purpose of this study was not to develop or build theory, which Johnson (2015) claimed is the primary focus of grounded theory research studies. Therefore, grounded theory was not an appropriate design for this study.

Single-case design (SCD) was the most appropriate design for this study. SCD includes the research of applied business problems and evidence-based problems (Gaya & Smith, 2016; Yin, 2018). Researchers use SCD to investigate complex, real-world problems (Fisher & Brown, 2017; Tetnowski, 2015). Furthermore, prior research studies about PI include the use of SCD to explore the logistical roles of the PI development (see Backlund, Chronéer, & Sundqvist, 2015; Brandrud et al., 2017; Gaya & Smith, 2016; Meena, Jain, Kumar, Gupta, & Dangayach, 2018). With a qualitative small purposeful sample, data saturation is an essential part of the data collection (H. Kim, Sefcik, & Bradway, 2017; Moser & Korstjens, 2018). Data saturation occurs when there are no new themes, concepts, or findings within the data analysis process (Fusch & Ness, 2015; Tran, Porcher, Falissard, & Ravaud, 2016). I achieved data saturation, during face-to-face interviews, as I recognized commonality. I confirmed data saturation by coding each sentence in the transcribed interview responses until there were no new codes.

### **12.3 Population and Sampling**

The population for the study included financial leaders who work for a hospital and who have successfully implemented PI factors. SCD is a means to examine the inherent distinctiveness of an individual case (Gaya & Smith, 2016; Yin, 2018). Due to the nature of SCD research, purposeful sampling is necessary to select potential research subjects that meet the requirements outlined in the research guide (Bungay, Oliffe, & Atchison, 2016). In qualitative research, choosing the sampling method varies due to the design and research questions (H. Kim, et al., 2017; Lotz, Jox, Borasio, & Führer, 2015; Moser & Korstjens, 2018). Purposeful sampling includes the selection of participants who have experienced the phenomena directly and whose account could provide answers to the research question (Etikan, Musa, & Alkassim, 2016; Lotz et al., 2015). Purposeful sampling is a nonprobability-based sampling technique, which allows the researcher to select the specific participants who have experienced the phenomena directly (Bungay et al., 2016). To align the research question with research participants' experiences, purposeful sampling is the appropriate sampling method for this study (see Bradbury-Jones et al., 2017; Creswell, Mozaffar, Lee, Williams, & Sheikh, 2017; B. Smith, 2018). Purposeful sampling includes selecting participants who have knowledge, experiences, and expertise with the underlying phenomena to ensure their insight contributes to answering the research question (see Bungay et al., 2016; Etikan et al., 2016).

Random sampling is another technique used to study population inference. However, random sampling includes a normally distributed population in quantitative designs (Gregoire & Affleck, 2018; Lone & Tailor, 2017). Random sampling includes random selection of participants over a larger population, making the research outcomes generalizable across the target population (Lone & Tailor, 2017; Zhu et al., 2017). Random sampling was not an appropriate method for this study.

Purposeful sampling allows the researcher to select participants intentionally centered on their explicit knowledge of the phenomena (Lotz et al., 2015; Patton, 2015). Sample sizes vary according to the purpose of the research project and the research question (Gentles & Vilches, 2017; Malterud et al., 2016). Qualitative phenomenological studies include the use of small sample sizes, specifically 20 participants (Malterud et al., 2016). Whereas the sample size for case study design is between two to six participants (Yin, 2018).

Yap and Webber (2015) enrolled 20 research participants in a multiservice healthcare organization to discover complexities in the leadership phenomenon of corporate culture.

Malterud et al. (2016) revealed the most important underlying concept of saturation in sample size is information power; hence, the more information the sample provides the smaller the number of participants required. To explore the phenomena of PI, I interviewed five research participants who experienced the implementation of PI strategies. Data saturation within the purposeful selection is a means to assure that the sample size is sufficient (see Malterud et al., 2016)

With a qualitative small purposeful sample, data saturation is essential in the selection of the research participants (Fusch & Ness, 2015; Malterud et al., 2015). Data saturation occurs when there are no new themes, concepts, or findings in the data analysis process (Fusch & Ness, 2015; Malterud et al., 2016; Saunders et al., 2018). Failure to achieve data saturation greatly diminishes the validity of qualitative research (Fusch & Ness, 2015; Saunders et al., 2018). Therefore, I applied techniques to purposefully sample and adhered to data collection strategies to ensure data saturation.

Sampling is an important aspect of any research study (Gentles & Vilches, 2017; Onwuegbuzie & Collins, 2017). Patton (2015) recommended over 40 sampling techniques for qualitative researchers, including purposeful sampling. I used a purposeful sampling strategy to select research participants that provided a varied study sample that included a full investigation of the phenomenon. By using purposeful sampling, I chose participants with direct knowledge of the PI phenomenon to aid in collecting data, which provided a holistic account of the specific research question. Explicit criteria for research participant eligibility included experiences with the PI phenomenon and financial leaders who provided timely financial statements associated with a regional hospital. Research participants were responsible for systems change.

To obtain the data required to understand the broad phenomenon, I used a semistructured interview protocol (see Appendix). Research participants need a comfortable, stress-free environment when answering the interview questions; hence, the participants should be familiar and comfortable with the interview setting (Kallio, Pietilä, Johnson, & Kangasniemi, 2016). By allowing the research participants to choose the location of the interview, I established rapport and collection of pertinent data in a natural setting as well as the participants were more comfortable with sharing their experiences as recommended by Kallio et al. (2016), McIntosh and Morse (2015), Nguyen (2015), and Paine (2015).

#### **12.4 Ethical Research**

Research ethics is an integral part of the research process (Wallace & Sheldon, 2015). Researchers' responsibility includes the protection of the rights, safety, dignity, and wellbeing of the research participants (U.S. Department of Health and Human Services, 1979). Ethical procedures provide the principles of protocols and standards including informed consent, privacy rights, harm protection, vulnerable class protection, participants' rights, data restriction, data storage, and conflicts of interest (Ngubevana, 2017). To ensure ethical procedures are meeting the principles of protocols, the IRB grants ethical approval before research; specifically, the interview process (Porter et al., 2017).

I asked research participants to electronically consent to research via e-mail, before study participation. The consent form contained specific details about the risks of study participation and the actions for risk mitigation. By implementing protocols for ethical research into the consent form, participants receive and must agree to the ethical standards, study details, voluntary participation, confidentiality requirements, and procedures for research participation (see Perrault & Nazione, 2016). Candidates could withdraw from the research study at any time, which was explicitly outlined within the consent form. Participants had opportunities to contact me via e-mail or phone and simply state their desire to withdraw from the study. Participants also had the option to not answer interview questions that were personal or made them feel uncomfortable.

Continued protection of the research participants, along with adherence to ethical standards are essential components of a research study (Wolfe et al., 2018). Participants' knowledge of the right to withdraw from the study is an ethical requirement set forth by the U.S. Department of Health and Human Services (Grady, 2015). Furthermore, participation in the research study was strictly voluntary and the research subjects did not receive compensation or other incentive for their participation.

Members of Walden University's IRB gave permission to complete the study after adequate and transparent ethical protections were in place. To address privacy and confidentiality with transparency, I discussed data storage in the consent form. I house the external storage containing electronic files in a locked fireproof safe, and each participant's file containing consent and other hard copies of data are located in a locked fireproof file cabinet. Five years after the completion of the study, I will destroy the flash drive. The approval number provided by Walden University IRB is 04-18-19-0322977, with approval expiration occurring on April 17, 2020.

The confidentiality protection process begins with private one-on-one interviews (see Dempsey, Dowling, Larkin & Murphy, 2016). Next, I took measures to achieve confidentiality of the research participants. Identity protection of the research participants integrates a process of code assignment where all personally identifiable information is removed from the data (see Khalil & Ebner, 2016; Ngubevana, 2017). Using coding of the individual participants to achieve confidentiality, I used a logical lettering sequence of the research participants, for example Participant 1 (P A), Participant 2 (P B), and Participant 3 (P C) as recommended by Khalil and Ebner (2016) and Ngubevana (2017).

### **12.5 Data Collection Instruments**

The researcher in qualitative studies is the primary data collection tool (Bristowe, Selman, & Murtagh, 2015; Morgan, Pullon, & McKinlay, 2015). Data collection strategies include semistructured interviews, publicly available information, and archival data procedures (Bristowe et al., 2015). Semistructured interviews are appropriate for qualitative case study research due to the design of the questions to gain explicit insight into a phenomenon (Bristowe et al., 2015; Galvin, 2015; Yin, 2018)

The objective for the collection of data included obtaining the ideas and perceptions of financial leaders' experiences with the implementation of PI. Independent, face-to-face interviews included administration of the interview questions using protocols included in the Appendix. Using open-ended interview questions, I obtained rich descriptions of the phenomena.

Reliability and validity of the research instrument ensure credibility and dependability (Castillo-Montoya, 2016; Cypress, 2017). The design of the interview protocol includes the collection of data needed to answer the research questions, as it is an integral part of research reliability (Castillo-Montoya, 2016). The interview questions (were precisely defined to encourage participants to provide rich descriptions of their perceptions and thoughts of the phenomenon as described by Galvin (2015).

Components of reliability and validity in qualitative research include credibility, dependability, and transferability (Chowdhury, 2015; Noble & Smith, 2015). Credibility is the accurate descriptions and interpretations of the research participant's experiences (Graneheim, Lingren, & Lundman, 2017; Liao & Hitchcock, 2018; Stewart, Gapp, & Harwood, 2017). Researchers use data saturation as a way to ensure credibility (Nelson, 2017). To reach data saturation in the study, I conducted in-depth analysis and continued review of the interview transcripts to ensure accurate interpretations and descriptions of the data as recommend by Lowe, Norris, Farris, and Babbage (2018). Moreover, I allowed the participants to review their interview transcript so they could verify the data and aide in the data analysis. This process, referred to as transcript review, contributes to the accuracy of the data; hence, increasing the credibility (see Koller, Kahn, & Barrett, 2015; B. Smith, & McGannon, 2018). Transcript review also contributes to the validity and reliability of the research instrument, as the process ensures the accuracy of the data enhancing the factors of credibility (see B. Smith & McGannon, 2018; Thomas, 2017).

Research dependability is the ability to replicate the research study because explicit quality measures are in place (Amankwaa, 2016; Connelly, 2016). Participant verification of the data, including a review of transcripts for accuracy, achieves the dependability of the study (see Amankwaa, 2016; Gunawan, 2015). Transferability is the ability to use and apply the findings of the study to different settings (Amankwaa, 2016). I described rich accounts in the research process, research methodology, data collection, and data analysis to ensure transferability.

### **12.6 Data Collection Technique**

The data collection process is a fundamental component of the research progression used to answer the research question (Abildgaard, Saksvik, Nielsen, 2016; Ary, Jacobs, & Razavieh, 2018). Although researchers can use multiple sources of data in qualitative research, the principal method of data collection is the interview process (Ranney et al., 2015; Yin, 2018). By interviewing the research participants, researchers seek to understand the holistic view of the phenomenon (Mayer, 2015; Ranney et al., 2015). Interviews were the primary source of data in this study. I conducted interviews with open-ended interview questions to collect data and coded the data during data analysis. I used information from within the hospital and on the hospital website to substantiate the triangulation of data.

I conducted semistructured interviews following the interview protocol. Data collection techniques include e-mail to obtain consent, e-mail and telephone contact with the research participants to schedule the interview, conducting the interview, and detailed note taking during the interview process (Heath, Williamson, Williams, & Harcourt, 2018)

The purposely sampled research participants should sign a consent form, select the location of the interview, and participate in the research process (Jentoft & Olsen, 2017). As a way to build rapport, I scheduled a preinterview meeting with the financial leader research participants chosen from a professional affiliation and discussed the research and data collection process. The preinterview meeting took place via phone call, and depended on the desire of the research participant, to make them feel comfortable to ask questions. At the conclusion of the preinterview meeting, I scheduled a time, place, and location for the semistructured interview.

The research question for this study included seven open-ended interview questions. Thirty to 60-minute interviews are adequate for a semistructured interview and are respectful of the research participants' time (see Wolgemuth et al., 2015). The data collection process ensued with voice recorded interviews and extensive note taking (see Shan et al., 2015). I used a computer to record the audio interviews. Furthermore, recording of the research participants' interviews allowed for the accuracy of the transcription process.

Extensive note taking included the description of nonverbal communication and behavioral observations (see Colorafi & Evans, 2016). Coding and data analysis to establish themes included the use of ATLAS.ti, an electronic software package (see Yang et al., 2018). Walshe et al. (2016) recommended following the compliances set forth by the sponsoring university for data storage and disposal. I followed the requirements set forth by Walden University for data disposal and will store consent forms along with the data in a locked fireproof safe for 5 years.

There are advantages and disadvantages to the data collection technique. The interview process is the main advantage as it is a way to ensure there is quality research based upon the research methodology (see Bevan, 2014). The phenomenological study design aligned with the purposive sampling technique (see Lewis, 2015). Semistructured, in-depth interviews included the collection of rich detailed descriptions from the research participants (see Yin, 2018). Furthermore, by conducting interviews, I documented the holistic experiences, analyzed the information to gain an in-depth exploration of the phenomenon, and provided reliable data to the field of research.

A disadvantage of the data collection technique is bias (Yin, 2018). Bias directly affects the interview process (Madera, 2013; Malone, Nicholl, & Tracey, 2014). Bias can occur from the use of leading interview questions and creation of a biased interview guide, which is detrimental to rigor in research (Tate et al., 2016). Both the researcher and participants can influence the collection of data if data bracketing is not used to identify preconceptions of the phenomenon (Copestake, 2014; Darawsheh, 2014). Because of the bounds of the study, a pilot study was not required.

Each participant received a copy of their transcribed interview so there was a review of the responses for accuracy (see Thomas, 2017). Additionally, I used transcript review as a means to verify the trustworthiness within the research process where each research participant verified my interpretations of their responses. Once I completed the transcripts, the research participants validated my transcription of their holistic experiences by providing feedback as recommended by Cypress (2017).

I used multiple data sources in the study as suggested by Yin (2018). I am the primary instrument of data collection by conducting semistructured interviews with five financial leaders (see Yin, 2018). I used publically available information to determine hospital designation or affiliation and obtained contact information for financial leaders as well as applicable literature as the data sources in this study. Artifacts can be a source for case study research (see Yin, 2018), and I used two visual posters located inside the hospital in this study.

### **12.7 Data Organization Technique**

I organized the data by obtaining the interview recordings and by transcribing interview responses that are stored on a protected storage device. I used ATLAS.ti, Microsoft Excel, and Microsoft Word to electronically log the research process, and classify and catalog data to identify emergent themes. Data journalization is essential for collection of the detailed holistic information (Taylor, Deuchar, & van der Leun, 2015). I journalized the data collection process by note taking and electronic storage filing. I used a password-protected flash storage device to store the data journals, audio recordings, and interview transcripts, along with a backup flash drive of the individual files. I will dispose of the data discs that contain the files 5 years after the completion of this study, as required by the sponsoring university. The other types of data collected are public information and do not require rigorous protections.

## 12.8 Data Analysis

The analysis of data includes a process of review of the elements of data interpretation that is systematic to discover underlying holistic meaning of the phenomenon (Gibson, 2016; Megnin-Viggars, Symington, Howard, & Pilling, 2015; M. Rosenthal, 2016). Following a systematic process enables researchers to explain, understand, and interpret the holistic account of the phenomenon (Megnin-Viggars et al., 2015). The primary source for data analysis included the research participant's responses to the following interview questions:

What role do you play in the financial close process?

Which of the challenges or constraints, if any, does your organization face to ensure timely financial closure: leadership, culture, change, or training?

What are the leadership's organizational goals regarding timely financial data reporting?

What IT issues influence timely reporting?

What type of training is provided on operational processes to meet reporting deadlines have you received?

What strategies does your organization use to deal with any of these challenges (i.e., leadership, culture, change, or training) to complete the financial process efficiently?

How do you determine your company's performance?

What other strategies do you use to complete the financial close process efficiently and promptly?

Data analysis includes the preparation and organization of the data collected for theme identification (Rowlands, Waddell, & McKenna, 2016). Data triangulation includes combing the analysis of data to study the phenomenon (Joslin & Müller, 2016). Four ways to triangulate are data triangulation, theory triangulation, investigator triangulation, and methodological triangulation (Joslin & Müller, 2016). Because of the multiple data sources in this study, data triangulation was an integral part of the study. Multiple data sources included semistructured interviews, publicly available information from websites, and publicly available literature, which are all ways to ensure depth and reduce bias according to Yin (2018).

A data source for this study included the open-ended interview questions. Coding the participant's responses into data clusters of invariant constituents, individual concepts, and ideas is a process to establish meaning from interview data (Klinke, Hafsteinsdóttir, Thorsteinsson, & Jonsdottir, 2014; Stone, 2013). I used a five-stage data analysis technique as suggested by Yin (2018):

1. Data collection
2. Data grouping
3. Theme grouping
4. Data assessment
5. Conclusion development

After I completed the review of data, I performed data analysis. I analyzed the data in the ATLAS.ti software by reviewing the raw data along with bracketing of the experiences to avoid potential bias. Coding includes highlighting the significant statements of the participants on the raw data transcripts (Cao et al., 2018; Colorafi & Evans, 2016; Geleyn et al., 2017; Valentine, Kopcha, & Vagle, 2018). I used colored highlighters to mark similar statements within ATLAS.ti software. The use of color-coding allowed for the identification of emergent themes (see Colorafi & Evans, 2016). I coded the data by using features within the ATLAS.ti software. Identifying similar statements is a means to establish horizontalization as recommend by Alsolami and Embi (2018); Earis, Garner, Haddock, Jenkins, and Jha, (2017); and Mackenzie and Byles (2018). Next, I used grouping, sorting, and reporting features within the ATLAS.ti software.

After I grouped codes within the interface, I exported the data into an electronic Excel file. I used features within the software to help establish pertinent themes from the interview data. By using a specialized qualitative software, I identified themes faster and more accurately from the raw data than by manually reviewing the data (see Shan et al., 2015; Zamawe, 2015).

Researchers can use features within qualitative analysis software to code data automatically and evaluate the results, resulting in information accuracy (Shan et al., 2015; Zamawe, 2015). Researchers can perform structural analysis efficiently through the automatic coding process of data coding, data retrieval, data comparison, and visual presentation without influence on the research design (Zamawe, 2015). ATLAS.ti software includes features of data importation, idea tracking, and identification of trends and emergent themes (Ang, Embi, & Yunus, 2016; Woods, Paulus, Atkins, & Macklin, 2016; Zamawe, 2015).

I imported the data transcription files from Microsoft Word into the ATLAS.ti software. After running the data analysis tools in the ATLAS.ti software, I isolated and determined meaningful words and emergent themes.

The conceptual framework was the bounds of the data and the results of this study. Upon theme identification, it is important to identify overarching data analysis of the theme interpretation (M. Harrison, Ryan, Gardiner, & Jones, 2017; Mackenzie & Byles, 2018; Nowell, Norris, White, & Moules, 2017). I analyzed the themes within the most current and existing literature throughout the TOC and PI conceptual framework. Analysis was crucial to the identification and comprehension of the concepts and themes within the views of the participant's experiences about the phenomenon (see Nowell et al., 2017).

After I completed the review of data, I performed data analysis. I analyzed the data in the ATLAS.ti software by reviewing the raw data along with bracketing of the experiences to avoid potential bias. Coding includes highlighting the significant statements of the participants on the raw data transcripts (Cao et al., 2018; Colorafi & Evans, 2016; Geleyn et al., 2017; Valentine, Kopcha, & Vagle, 2018). I used colored highlighters to mark similar statements within ATLAS.ti software. The use of color-coding allowed for the identification of emergent themes (see Colorafi & Evans, 2016). I coded the data by using features within the ATLAS.ti software. Identifying similar statements is a means to establish horizontalization as recommend by Alsolami and Embi (2018); Earis, Garner, Haddock, Jenkins, and Jha, (2017); and Mackenzie and Byles (2018). Next, I used grouping, sorting, and reporting features within the ATLAS.ti software.

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## **12.9 Reliability and Validity**

Factors of quality research include reliability and validity (Janvrin & Watson, 2017). The overarching goal of a qualitative researcher is to produce accurate, genuine, and valid research findings (Corbin & Strauss, 2015). Researchers must establish and implement approaches to research as a way to substantiate the qualitative research results (Yin, 2018). Researchers should use reliable and valid research strategies to reach credibility, confirmability, dependability, and transferability of their research findings (Corbin & Strauss, 2015).

### ***Reliability***

The reliability of the data is crucial to quality research (Noble & Smith, 2015). In quantitative research, reliability links to dependability (Leung, 2015). Dependability of research means the research is trustworthy and can be replicated, where specific research quality measures were incorporated into this study (see Castillo-Montoya, 2016). To ensure this qualitative research study was dependable, the research process must be a holistic account of the process (see Cypress, 2017).

Researchers can mitigate threats to dependability along with enhancing research replication by providing an in-depth transparent description of the data collection process, analysis, and interpretation (Colorafi & Evans, 2016).

I mitigated the threats to dependability by using transcript review and research journalization. Journalization is a way to document the research process and is a means to provide a detailed log of the survey instrument, processes, and techniques along with an account of the process for data coding, analysis, and interpretation (Taylor et al., 2015). Providing a detailed account of the data collection process was a way to increase dependability; specifically aiding in research replication (see Taylor et al., 2015).

Additionally, the use of holistic descriptions of the data collection process and analysis is a way to provide quality research replication that other researchers use while investigating similar research phenomenon (Cypress, 2017). Another way to increase dependability is to ensure data transcription accuracy from the data collection (B. Smith & McGannon, 2018). Transcript review is a means to validate the data collected (Thomas, 2017). Research participants reviewed their interview responses and the research analysis to ensure the transcripts and research findings were accurate.

In qualitative research, dependability is a crucial component of quality research (Castillo-Montoya, 2016). To ensure dependability along with replication of this study, I provided rich details about purposive sampling, data coding, and consistency checking. The data coding process included the use of electronic software, which enhanced the dependability of the study (see Zamawe, 2015). By using an electronic coding process, I achieved consistency and accuracy in coding that further enhanced the potential of replication.

I used transcript review as a means to check transcribed interviews to obtain consistency in the definition of codes. The research participants reviewed the transcribed interviews and data interpretation to verify accuracy of data translation. Transcript review and member checking techniques increase the credibility of qualitative studies (Koller et al., 2015; Taylor et al., 2015).

Another way to enhance reliability and credibility is the triangulation of data (Guetterman et al., 2015). Triangulation is the use of multiple data collection techniques to gain a holistic understanding of the phenomenon and is a critical factor of research credibility (Jentoft & Olsen, 2017; Joslin & Müller, 2016). In this case study, I used interviews, field notes, artifacts, general website information, and transcript review to ensure data triangulation.

### ***Validity***

Factors of quality research include the internal and external aspects of validity (Yap & Webber, 2015). Furthermore, validity in qualitative studies includes credibility, transferability, dependability, and confirmability (Corbin & Strauss, 2015; Lewis, 2015; Sutton & Austin, 2015). Next, I present the measures taken to ensure research validity, as well as saturation.

Research credibility is essential to dependability (Castillo-Montoya, 2016). Research credibility includes accurate descriptions and interpretations of the research participant's experiences (Cypress, 2017). Interrater reliability is a factor of research credibility (B. Smith & McGannon, 2018; Thomas, 2017). Interrater reliability is an indicator of consistency and includes research participants describing similar behaviors (B. Smith & McGannon, 2018; Thomas, 2017). To ensure credibility in this study, I used detailed and accurate data transcription of the collected data and used transcript review by the participants.

Data transferability includes collecting and documenting sufficient details within the data collection process (Chowdhury, 2015; Noble & Smith, 2015). Scholars can decide whether the data collection environment is similar to another situation (Chowdhury, 2015; Noble & Smith, 2015; Yin, 2018). Furthermore, providing a rich description of the process allows researchers to determine if the research findings apply to another setting, leading to potential for study replication (Amankwaa, 2016; Connelly, 2016).

Data confirmability occurs when credibility, transferability, and dependability are clear and concise within the study (Corbin & Strauss, 2015). Data confirmability entailed reporting of the authentic data and observations as exposed in the data collection and analysis; hence, explicit reporting eliminated biases that can skew the results (see Bengtsson, 2016; Lewis, 2015; Morse, 2015). Objective and neutral presentation of data ensured confirmability in this study (see Bengtsson, 2016).

Scholars debate precise determinants of data saturation in qualitative research; yet, scholars agree data saturation is an integral part of research validity (Fusch & Ness, 2015). Data saturation occurred because there is adequate information available about the research process to reproduce the study (see Fusch & Ness, 2015). Additional characteristics of successful data saturation in qualitative research included thorough data analysis in which no further themes, data, or coding occurred (see Fusch & Ness, 2015).



In addition, data saturation occurred within the small sample sizes because the characteristics of the research participants aligned to the specific goals of the study (see Malterud et al., 2016). Lastly, saturation occurred because the research participants had extensive knowledge about the phenomenon under investigation (see Palinkas et al., 2015).

### 13 Research Findings

Analysis of five, face-to-face, semistructured interviews with hospital financial leaders about the successful strategies used to implement timely and efficient accounting cycles resulted in the following four emergent themes: provide training and professional development, promote teamwork, engage in effective communication practices, and use IT. The purpose of this qualitative, single case study was to explore successful strategies hospital financial leaders used to complete efficient closing cycles to evaluate performance and support business decisions. In Theme 1, 4 out of 5 participants attribute training and professional development to timely financial close. In Themes 2, 3, and 4, all five participants attributed teamwork, effective communication, and IT as successful strategies used to meet financial reporting deadlines, which hospital financial leaders need to evaluate performance and support business decisions.

#### 13.1 Presentation of the Findings

The central research question in this qualitative case study was: What strategies do hospital financial leaders use to implement efficient closing cycles to evaluate performance and support business decisions? Four themes emerged during the data analysis (see Table 1). In this section, I outline each theme, discuss the findings, and confirm, disconfirm, or extend the existing knowledge within the current literature. At the conclusion of this section, I discuss the findings in relationship to the TOC and PI conceptual framework to assess if the findings align with or dispute other relevant findings within the literature.

Table 1

*Participants' Responses Coded into Themes*

Themes	Participants <sup>a</sup>	Responses <sup>b</sup>
1. Provide training and professional development	4	21
2. Promote teamwork	5	17
3. Engage in effective communication practices	5	26
4. Use IT	5	31
Total (duplicated)	19	95

Note. a Number of financial leaders interviewed whose responses linked to the themes.

b Number of financial leader responses linked to the themes.

#### *Theme 1: Provide Training and Professional Development*

Four of the 5 participants discussed the need for and the importance of training and professional development within the hospital industry due to the dynamic system environment. P A discussed that “We do have a lot of the training [and it] is in house and it is me instructing people...” and “...those who are in the know, instructing others...” P C emphasized the importance of the growth of human capital through in-house training by stating, “It is more of other coworkers, 95% of training is from coworkers.” P E revealed that successful hands-on training occurs by “...helping teach them how he wants the [operational accounting] processes to occur...”

Although P C believes that most of the training and professional development occurs in-house, there is a need for external training within the idiosyncratic hospital industry. P B echoed and confirmed the changing environment by stating, “What you know today, you are not going to know tomorrow” because there are constant changes in the Medicare, Medicaid, and insurance company policies that influence the timely collection of accounts receivable. P A discussed the multitude of training and professional development resources available “...whether it be in the area of [the] revenue cycle, or consulting, or with experts who provide training in case management, and/or any area of the company where you have needs.” Furthermore, P A stated financial leaders pay for specialized training, which in turn, increases the overall cost of labor within the firm.

Four of the 5 participants specifically acknowledged using the Internet for training. P C identified the Internet as an excellent tool for learning advanced techniques in Excel, which supplements the operational accounting procedures associated with the closing cycle. Although P B sends employees for face-to-face training seminars, she also stated “...nowadays you can do [training] online, so they can just sit at their PC [personal computer] and get the training needed...”

Clearly in view of all stakeholders at the hospital was a large poster containing a five-star employee recognition program. Data included embedded human capital development into the recognition system as well as employee of the year visuals. These data support the findings of Theme 1. I did not exclude these data because the third pillar on the five-star recognition program included financial leadership as a condition of recognition. I excluded findings from the website and a community health needs report because data from these sources did not answer the research question.

Throughout scholarly and professional literature, there are studies that support my findings. For instance, scholars attribute the shift in labor force workers from manual laborers to knowledge workers to the ever-changing economic conditions as well as the shift from the industrial age to the information age (Drucker, 2006; Ramírez & Nembhard, 2004). As workers gain knowledge through training and professional development, expenses occur. Additional training expenses contribute to the overall increasing prices in the healthcare sector. Emanuel (2018) and Papanicolas et al. (2018) conferred that as the prices of goods, labor, and administrative costs within the health system continue to rise, a complete system overhaul may be needed to increase value and efficiency.

The findings of a recent study about assessing performance and creating value in the healthcare sector also supports this theme (see Barnabè, Guercini, & Perna, 2019). Training is an integral part of overall firm sustainability, involving value creation and promotion of system efficiencies (Barnabè et al., 2019). The findings from another study about growing nurses into leadership positions supports and confirms this theme (see Cabral, Oram, & Allum, 2019). Nurses in England who seek leadership positions face increased pressure that is demanding and isolating as well as increased responsibility (Cabral et al., 2019). Nurses that successfully transition into leadership positions need coaching, mentoring, and support networks as well as timely training (Cabral et al., 2019). Both current studies support the findings of this study because training is an integral part of the development of employees.

Both the PI and TOC frameworks link to innovations used to improve processes that lead to innovation in system capabilities (Antony et al., 2016). Albzeirat et al. (2018) and De Zan et al. (2015) described the PI and TOC frameworks as an essential aspect of improving quality through growing human capital within the organization. Albliwi et al. (2015) described specific TOC issues that include the need for waste reduction within the system. The underutilization of human capital leads to rework and defects within the organization (Antony et al., 2016), and through training employees understand the most innovative practices needed to complete tasks (Albliwi et al., 2015). Gonzalez-Aleu et al. (2018) identified the need for more research about what strategies successful leaders use to implement PI initiatives in the hospital services industry. Therefore, the findings in this study extend the knowledge in the field by specifically identifying the importance of training as a factor of employee growth and development.

### ***Theme 2: Promote Teamwork***

All five participants identified teamwork as an essential aspect of completing operational accounting procedures on time. Research participants mentioned teamwork 17 times during the interviews, as shown in Table 1. P E revealed “we all have to work as team.” P C stated “At month-end, there is a lot of teamwork. For example, other departments must have their data current because their [financial] close at month-end influences ours.” P B agreed that “We have to close out the month-end, otherwise they can’t close out their part...” P A stressed that in order to close the books at month-end, financial leaders “depend on [the] manual record from them [other departments] to upload our charges” to complete the operational accounting procedures.

Successful strategies used by financial leaders include innovating the process of teamwork to achieve efficiency. For example, P B wants to make sure she does not owe anyone information needed to close the month-end. P B also stated, “I work hand in hand with the CFO” and that she is “not intimidated” to ask other financial leaders for help. P D stated, “I focus on making sure our financials are as accurate as possible so those who make the important decisions have the data they need to make the best decisions.”

A simple yet practical approach to teamwork includes the use of checklists. P A stressed that the operational accounting procedures “require multiple steps and checklists” to complete the cycle and report the results. P B uses a checklist to ensure her part is completed on-time, and P C also uses a checklist that is located on a large whiteboard within the accounting departmental offices. P C described that she “...write[s] on a white board and if I do it, I mark it off. If XXXXXX does it, she marks it off. Anybody, like XXX [CFO], wants to know what has and hasn’t been done, they can look at the white board and see what we have done.” P C also stressed that “This is the most efficient way to share our progress [with other financial leaders], and get things done” on-time.

Information displayed on a visual poster located in all stakeholders’ line of vision substantiated a shared conception of teamwork.

The five-star recognition program contained information about how employees eligible for recognition must work well with other stakeholders and show financial leadership. I excluded website information, including the community needs assessment, and the second visual as data because they did not relate to the research question; however, analysis of the community needs assessment revealed the organizational leadership used a shared vision of process improvement.

There are supporting studies in the professional and academic literature. For example, Antony et al. (2018) revealed linkages between performance management and teamwork as essential elements of a system change program within an organization. De Zan et al. (2015) identified tangible experiences, observation, synthesis, and experimentation as key components of organizational system processes. In the healthcare setting, visual management tools linked to increased organizational resources among nurses (Williamsson et al., 2019). Williamsson et al. (2019) discovered a visual aid enhanced the completion of tasks, which led to increased efficiencies.

Results of two recent studies confirm the findings concerning this theme (see Crane & Hartwell, 2019; Sweeney, Clarke, & Higgs, 2019). Crane and Hartwell (2019) studied the implications of teamwork as an effective and evolving element of human capital, while Sweeney et al. (2019) revealed the need for the presence of embedded teamwork within the shared leadership practices in an organization. The results of both studies confirm the importance of teamwork within an organization and relate teamwork to leadership strategy.

Both PI and TOC frameworks link to teamwork as a means to improve processes and efficiency; yet, the findings of this theme expand, contrast, and confirm the literature. Iyede et al. (2018) discovered an unclear correlation of operational processes to outcomes and organizational strategy. In another study, researchers discovered organization members understood needs for PI; yet, workers did not understand the operational PI practices of lean manufacturing and the relationships to outcomes (Singh et al., 2016). Jacobs et al. (2015) claimed leaders seek PI innovations to improve their business processes and enhance operating performance; yet, lean and six sigma philosophies are expensive as well as disruptive to the organizational system. The findings of this theme disconfirm and extend extant PI literature. Successful strategies of teamwork require inexpensive techniques employed by financial leaders in hospitals, contrasting the findings of Jacobs et al. that lean philosophies are expensive. The findings from this theme extended the research of Ideye et al. and Singh et al. (2016) because financial leaders correlate improved operational accounting procedures to a timely financial close.

### ***Theme 3: Engage in Effective Communications Practices***

Each of the five participants discussed the importance of effective communication throughout the accounting cycle. Research participants mentioned communication 26 times, as shown in Table 1. P C stressed “Communication really is the strongest thing at month-end [closing procedures].” P B attributes “communication, so you know what is expected of you” as a factor of timely financial close. P E revealed that “When we communicate the need for information...” other members in the organization obtain knowledge of processes and deadlines. Furthermore, P B stated that “Just having that conversation, has them getting the data to us sooner.”

Communication is an essential part of efficiency in the financial close procedures. P E mentioned that effective communication occurs when “we go back to a department, as a manager, and say look we need some additional receipts or documentation,” and they submit the data as soon as possible. P D discussed a problem collecting timely data from an external source, and it was “discovered that the company didn’t realize we were waiting on it.” P D continued “Just having that conversation, has them getting the data to us sooner.” Effectively communicating why financial leaders need data in a timely manner improves the operational accounting process of timely financial close. P C explained, “Helping them understand why it is important, as they do not understand the financial [close process]. I don’t understand clinical...” Finally, streamlining communication improves efficiency, where P C explained, “Everyone can see and use [the white board checklist], and it streamlines communication of the [operational accounting] processes among us.”

Additional information from data sources substantiated communication occurred throughout the organization. One visual, the five-star recognition program, listed financial leadership as a factor of employee recognition. Although the information in the other data sources substantiated the theme findings, but information in these data do not relate to specific financial leadership communication; therefore, I excluded these data from the findings.

Both Bartov and Konchitchki (2017) and Fay and Negangard (2017) revealed the primary reason for delays in financial reporting include inefficiencies within operational accounting procedures. Whereas Rihter et al. (2017) discovered a timely financial close process includes the engagement of all business process functions.

Furthermore, Rihter et al. suggested that by viewing timely financial close process as an ultimate goal, financial leaders can focus upon the intermediate target of the flow of business process mechanisms that can improve and further contribute to the timeliness of information release. Effective internal communication between hospital financial leaders as well as external communication with stakeholders contributes to the efficiency of operational accounting processes, as confirmed by the findings in this theme.

Research findings from two recent studies confirm the need for effective communication (see Back, Fromme, & Meier, 2019; Shakibaei, 2019). Back et al. (2019) revealed when effective communication occurs between physicians and patients, patients and their family members understand the illness and share decision making. Shakibaei (2019) discovered when hospital leaders pursued accreditation and defined operational business processes, communication improved throughout the organization. The findings from this theme support the most recent literature about effective communication in hospitals and the corresponding relationship to improved business processes because understating a diagnosis or defining operational processes ensues through explicit communication processes (see Back et al., 2019; Shakibaei, 2019)

Results of the TOC and PI studies support the findings of effective communication. For example, clearly defined construct identification allows leaders to facilitate PI measures, and greater understanding and communication throughout the organization occurs (Yadav et al., 2017). Williamsson et al. (2019) revealed visual communication tools contribute to PI within the organization. Trojanowska et al. (2017) discovered substantial risk factors in firms who have leaders that seek TOC efficiency. One of the risk factors includes contradicting operational objectives within in different organizational departments (Trojanowska et al., 2017). Effective communication is an integral part of understanding the systematic business process flow as described by Trojanowska et al., Yadav et al. (2017), and Williamsson et al.; therefore, the research findings in this theme support existing literature.

#### ***Theme 4: Use IT***

Five out of 5 participants attribute the use of IT to assist in efficient closing routines. Research participants mentioned IT 31 times, as shown in Table 1. All five of the participants identified MEDITECH as the primary source used for information processing. Three of the 5 participants mentioned another IT software. For example, P D revealed the “Software we use for time keeping is Kronos” and P C stated, “I track a lot in Excel.” P C explained all hospital IT resources “helps us to reach that deadline much easier.” P D discussed “...it is the information [extracted] from the IT” that contributes to timely financial close. P B acknowledged “IT is very very important to my process”; yet, “if our system goes down we gotta make sure IT [department employees] can get us back up.”

MEDITECH is the primary software used within the hospital, with 5 out of 5 participants specifically mentioning MEDITECH. While P C stated “Most of the data is in MEDITECH,” P A explained the “... main system that we use here is called MEDITECH” and although “...it is a well-known EHR system, employee health record, and its main focus is the clinical record side...”, it contains “...everything from ap [accounts payable], payroll, materials, ar [accounts receivable] which is called Bar, all rolled together into a general ledger [that is used ] to help prepare the financial statements.” P A described that the MEDITECH software contains elements of internal control that “...make sure we have checks and balances to make sure your revenues you record are proper and can be supported by clinical documentation” and related process “efficiency goes back to those closing routines and a lot of those [internal] controls are within the individual modules.”

Other data substantiate the use of IT. The hospital website contained information about free access to Wi-Fi for all stakeholders. I excluded the community health assessment and visuals, because these data did not align with the research question.

Professional and academic research results identified within this study supports the findings of IT usage (see Arnaboldi, 2018; Janvrin & Watson, 2017; McKinney, et al., 2017). Big data within the healthcare system landscape contributes to the dynamic landscape; yet, the transformation of data to make better decisions within the hospital market is underdeveloped within the literature (Janvrin & Watson, 2017). Arnaboldi (2018) suggested gaining access to unambiguous data is an essential element of decision-making frameworks. The research findings discovered in this theme confirm the research findings of Arnaboldi because financial leaders use IT resources to complete the operational accounting cycle and to report the financial position of the firm; hence, financial leaders need financial reports to make strategic decisions. McKinney et al. (2017) revealed there should be a nontraditional approach to addressing the implications of big data. The research findings exposed in this theme confirm the research findings discovered by McKinney et al. because of the multiple IT resources used by hospital financial leaders.

Moreover, Janvrin and Watson (2017) discovered accountants use emerging tools to decipher large amounts of data, including paper-based information and evolving technologically based information. The research findings revealed in this theme support Janvrin and Watson, because hospital financial leaders use IT to turn ambiguous data into financial reports that financial leaders prepare at the end of the financial close process.

Results of two recent studies confirm the need for IT in hospitals (see Carvalho, Rocha, Vasconcelos, & Abreu, 2019; Habeeb et al., 2018). Carvalho et al. (2019) revealed hospital leaders address big data through data collection, data sharing, and data analysis, with data analysis being the most current area of scholarly research. The research discovery by Habeeb et al. (2018) not only exposed the need for larger storage platforms because many healthcare resources include large video files, but also identified electronic patient information requires extensive information security. More importantly, Habeeb et al. posit real-time electronic data are essential in healthcare settings so that healthcare providers make the best decisions regarding patient care. The findings of both recent studies align with the findings of the use of IT in hospitals (see Carvalho et al., 2019; Habeeb et al., 2018)

Researchers within the TOC and PI conceptual framework literature support using IT in the hospital sector. Goldratt (1990) defined the constructs of the TOC as a systems thinking process for problem identification, strategies to solve problems, and implementation of strategies to facilitate change where hospital financial leaders use IT for problem identification, specifically internal controls embedded within MEDITECH software. Balloni and Targowski (2015) revealed organizational change occurred from the transition to the information age from the industrial age. Bertomeu and Marinovic (2015) conclude that financial leaders must use disambiguous data in reporting because the ambiguous data in reporting is unclear to stakeholders. Findings of both Balloni and Targowski and Bertomeu and Marinovic supported the use of IT by hospital financial leaders, as IT contributes to the timely reporting of financial data within the information age as well as contributes to PI by improving internal controls within the operational accounting procedures that lead to the financial close.

### **13.2 TOC and PI Conceptual Framework**

The findings from this study extended the research in the PI and TOC literature by filling a gap on the lack of knowledge about the services sector as described by Deblois and Lepanto (2016), Hasle et al. (2016), and Lee et al. (2018). The findings within this study linked hospital operational accounting procedures and timely financial reporting to strategic business decisions, and linked a performance measurement to operational accounting practices within the TOC PI framework (see Hilmola & Li, 2016; Parkhi et al., 2016; Trojanowska et al., 2017) Finally, Dubey et al. (2016) revealed the need for qualitative research to advance the PI and TOC six sigma and lean theory development, and the findings of this study incorporated both PI and TOC frameworks within hospitals.

### **13.3 Applications to Professional Practice**

The specific business problem was that some hospital financial leaders lack strategies to implement efficient closing cycles to evaluate performance and support business decisions. The results of this study revealed successful strategies financial leaders use to achieve timely financial closure. The findings discovered in this study advance business practice because they describe how and why timely financial reporting occurred.

The results of this study included four suggestions for financial leaders to incorporate into the operational accounting process: provide training and professional development, promote teamwork, engage in effective communication, and use IT. Organizational leaders can use the findings within this study as an approach to overall successful business strategy that leads to effective decision making. Financial leaders that seek successful strategies can use the themes discovered in this study as a model for PI. Researchers who seek qualitative studies in the service sector can use the research findings to further extend the literature about PI and TOC.

### **13.4 Implications for Social Change**

The results of this study could have implications for positive social change. Implications could assist leaders with new insight into dynamic organizational change. By understanding the factors of PI endeavors, the costs associated with PI implementation could be reduced thereby increasing profitability and competitive advantages (Hallam et al., 2018). Organizations that implement successful PI could achieve strategic competitive advantages along with increased ROI by understanding the dynamic change upon the structural factors of PI: leadership, culture, change, and training (Heavey et al., 2014; W. J. Miller et al., 2018). Because there are gaps in the strategies to achieve implementation maturity of PI, results of the study can expose leadership to the dynamic complexity of systems change in the PI phenomenon (Hallam et al., 2018).

When leaders are aware of the factors influencing PI, there is potential for improved dynamic flexibility in response to changes in consumer demand and within industry challenges and opportunities (Kobus et al., 2017). Finally, PI in hospitals could provide insight into specific system processes that contribute to the rising cost of global healthcare (Honda et al., 2018).

### **13.5 Recommendations for Action**

In this qualitative, single case study, I explored successful strategies that financial leaders used to meet timely reporting to support strategic business decisions. Financial leaders can use the results to engage in PI practices within the operational accounting cycle. To gain a sustainable competitive advantage, financial leaders use reports containing the relative financial position of the firm to make timely decisions (Kamalluarifin, 2018). Furthermore, gaps in the lean literature include how to link transformative continual improvement strategies to leadership actions related to financial performance of the firm (Hallam et al., 2018; Mohamed & Mwanyota, 2018). The recommendations from this study could aid (a) financial leaders who struggle with meeting reporting deadlines, (b) financial leaders who engage in PI but need new ideas to continue the development of increasing efficiency, (c) hospital leaders who struggle with overall systems change, and (d) students and researchers who desire to study successful strategies to meet financial reporting deadlines that support strategic business decisions. All four recommendations contribute to the advancement of applied business practice.

Four recommended steps for action include invest in professional development and training, promote a culture of teamwork, engage in effective communication, and use IT resources. Hospital financial leaders face dynamic environments. By focusing on efficiency in specific functions, financial leaders can not only meet reporting deadlines consistently but also respond to a rapidly changing healthcare system environment. When financial leaders continually analyze the operational accounting procedures in search of gaining efficiency of processes, opportunities exist for PI.

The first recommended action includes training and professional development. Financial leaders need fresh data, including data about how to meet regulatory reporting requirements. Hence, if government members pass laws or regulations, training and professional development resources provide avenues for financial leaders to stay current. Financial leaders need accurate data that they collect from many linkages throughout the organization and external stakeholders. Training and professional development are essential to help foster greater understanding of the process. Training and professional development could be internal or external. Internal sources include training others on predefined processes. External training includes training on how to use software more efficiently as well as webinars on the changes in reporting requirements.

The second recommended action includes teamwork. To close the accounting cycle and generate financial reports, financial leaders need data from others within the organization and from others outside of the organization. Teamwork takes place when people work together to reach a common goal. Financial leaders foster a culture of teamwork by letting others know what is expected and when it is expected. Financial leaders foster teamwork through effective communication, to both internal and external sources.

The third recommended action includes using effective communication practices. Financial leaders communicate to others the need for data to meet reporting deadlines. Taking time to explain the reasoning behind the need for information contributes to timely data collection. Financial leaders communicate among themselves to meet deadlines, for example, what is missing to complete each step, so that all financial leaders at an organization know the current phase of the accounting cycle. Financial leaders communicate the financial position of the firm to stakeholders through the release of financial statements. Financial leaders who meet reporting deadlines engage in effective communication practices.

The fourth recommended action includes using IT to streamline the accounting cycle processes. Financial leaders translate disambiguous data into financial reports, and IT resources aid in this process. Internal controls within the modules of accounting software provide an audit trail and ensure data are accurate. IT aides in the visual analysis of data, costing, and accruals. Financial leaders who successfully use IT resources meet reporting deadlines.

Participants in this study will receive a one- or two-page summary of the study's findings. I will send a copy of the findings to the participants through e-mail. The participants can access the study electronically. The final study will be published in the ProQuest Dissertations and Theses Database. I will also provide avenues for the participants through meetings or a presentation of findings.

### 13.6 Recommendations for Further Research

I conducted a qualitative, explorative single case study to discover the strategies hospital financial leaders use to implement efficient closing cycles to evaluate performance and support business decisions. Other researchers should continue more studies to address study limitations of geographic location and sample size. I interviewed financial leaders who work for a regional hospital. More research is needed to extend the geographical location beyond the southern region of the United States. The results of this study may not apply to every workplace or industry. Future researchers could research companies outside of the service industry, use larger sample sizes, and use other methodologies including multiple case studies.

Future researchers should adhere to some delimitations as outlined in this study. Researchers could continue to study the linkage between financial performance and PI, as there are significant gaps within professional and academic literature. Other researchers should consider the need for more qualitative and mixed-method studies to continue the progressions of PI and TOC development in the services sector. More qualitative studies could provide insight into successful strategies used for efficient closing cycles in applied business practice. However, future researchers could focus on quantitative studies relevant to the linkages in PI and TOC progression. Focus groups or surveys could provide additional successful strategies of efficiency measures. Focusing on the internal and external stakeholders involved with providing data to financial leaders in a timely manner could contribute to greater understanding of the entire applied business practice of operational accounting procedures.

### 13.7 Reflections

Bias is something all researchers face and must address. I addressed issues of bias by recognizing it is a factor, employing bracketing, and by using journalization. I also used an interview protocol located in the Appendix, which laid out my plans and provided a frame of reference. These methods allowed me to consistently keep in mind bias is there; yet, as a researcher at the doctoral level I am able to think beyond preconceived notions so I can report accurate findings without bias.

### 14 Conclusion

Organization leaders rely on the financial analysis of the economic position of the organization to make strategic business decisions (Satwinder et al., 2016). However, the lack of timeliness of the financial data could lead to poor decisions and missed opportunities resulting in loss of profit margins (Sridharan, 2015). Some financial leaders struggle with finding successful strategies to complete the reporting process. The purpose of this qualitative case study was to answer the central research question: What strategies do hospital financial leaders use to implement efficient closing cycles to evaluate performance and support business decisions? Five financial leaders at a regional hospital participated in semistructured interviews. I also collected data from the hospital website and from two visual posters located in the hospital. The following themes emerged from data analysis: (a) provide training and professional development, (b) promote teamwork, (c) engage in effective communication practices, and (d) use IT. The findings of the study revealed financial leaders who use these strategies meet financial reporting deadlines that contribute to better business decisions.

### References

- Abildgaard, J. S., Saksvik, P. O., & Nielsen, K. (2016). How to measure the intervention process? An assessment of qualitative and quantitative approaches to data collection in the process evaluation of organizational interventions. *Frontiers in Psychology, 7*, 1380-1387. doi:10.3389/fpsyg.2016.01380
- Al Amin, M., Saha, A. K., & Mohona, T. U. (2018). Performance improvement of jute industries using theory of constraints (TOC). *European Journal of Advances in Engineering and Technology, 5*, 303-311. Retrieved from <http://ejaet.com/>
- Albliwi, S. A., Antony, J., & Lim, S. A. H. (2015). A systematic review of lean six sigma for the manufacturing industry. *Business Process Management Journal, 21*, 665-691. doi:10.1108/BPMJ-03-2014-0019
- Albzeirat, M. K., Hussain, M. I., Ahmad, R., Salahuddin, A., Al-Saireh, F. M., & Bin-Abdun, N. (2018). Literature review: Lean manufacturing assessment during the time period (2008-2017). *International Journal of Engineering Management, 2*(2), 29-46. doi:10.11648/j.ijem.20180202.12
- Alcaide-Muñoz, Cs., & Gutierrez-Gutierrez, L. J. (2017). Six sigma and organizational ambidexterity: A systematic review and conceptual framework. *International Journal of Lean Six Sigma, 8*, 436-456. doi:10.1108/IJLSS-08-2016-0040

- Aldowasian, T., Nourefath, M., & Hassan, J. (2015). Six sigma performance for non-normal processes. *European Journal of Operational Research*, 247, 968-977. doi:10.1016/j.ejor.2015.06.036
- Alexandersen, N., Anell, A., Kaarboe, O., Lehto, J. S., Tynkkynen, L. K., & Vrangbaek, K. (2016). The development of voluntary private health insurance in the Nordic countries. *Nordic Journal of Health Economics*, 4(1), 68-87. doi:10.5617/njhe.2718
- Alfakhri, D., Harness, D., Nicholson, J., & Harness, T. (2018). The role of aesthetics and design in hotelscape: A phenomenological investigation of cosmopolitan consumers. *Journal of Business Research*, 85, 523-531. doi:10.1016/j.jbusres.2017.10.031
- Alsolami, B., & Embi, M. R. (2018). Crowding perception: A case study of developed systematic literature review procedure with multiple software programs as management and synthesis tools. *International Journal of Engineering & Technology*, 7, 121-126. Retrieved from <http://www.sciencepubco.com/index.php/ijet/index>
- Alyahya, M. S., Hijazi, H. H., Al Qudah, J., AlShyab, S., & AlKhalidi, W. (2018). Evaluation of infection prevention and control policies, procedures, and practices: An ethnographic study. *American Journal of Infection Control*, 46, 1348-1355. doi:10.1016/j.ajic.2018.05.023
- Amankwaa, L. (2016). Creating protocols for trustworthiness in qualitative research. *Journal of Cultural Diversity*, 23, 121-127. Retrieved from [tuckerpub.com/jcd.htm](http://tuckerpub.com/jcd.htm)
- Ang, C., Embi, M., & Md Yunus, M. (2016). Enhancing the quality of the findings of a longitudinal case study: Reviewing trustworthiness via ATLAS.ti. *The Qualitative Report*, 21, 1855-1867. Retrieved from <http://nsuworks.nova.edu/tqr/vol21/iss10/7>
- Antony, J., Rodgers, B., Coull, I., & Sunder M. V. (2018). Lean six sigma in policing services: A case study from an organisational learning perspective. *International Journal of Productivity and Performance Management*, 67, 935-940. doi:10.1108/IJPPM-07-2017-0173
- Antony, J., Setijono, D., & Dahlgaard, J. J. (2016). Lean six sigma and innovation - an exploratory study among UK organisations. *Total Quality Management & Business Excellence*, 27, 124-140. doi:10.1080/14783363.2014.959255
- Antony, J., Snee, R., & Hoerl, R. (2017). Lean six sigma: Yesterday, today and tomorrow. *International Journal of Quality & Reliability Management*, 34, 1073-1093. doi:10.1108/IJQRM-03-2016-0035
- Antos, J. (2015). A market approach to better care at a lower cost. *Academic Medicine*, 90, 1434-1437. doi:10.1097/ACM.0000000000000925
- Aplin, B., Nazzal, M., Qu, W., Zelenock, G., Kazan, V., & Abbas, J. (2015). Patient variables impacting hospital costs from 2008 to 2010. *The American Journal of Surgery*, 210, 134-140. doi:10.1016/j.amjsurg.2014.08.018
- Arnaboldi, M. (2018). The missing variable in big data for social sciences: The decision-maker. *Sustainability*, 10, 3415-3433. doi:10.3390/su10103415
- Ary, D., Jacobs, L. C., & Razavieh, A. (2018). *Introduction to research in education*. New York, NY: Holt, Rinehart and Winston.
- Auerbach, A. J., Charles, K. K., Coile, C. C., Gale, W., Goldman, D., Lee, R., . . . Weil, D. N. (2017). How the growing gap in life expectancy may affect retirement benefits and reforms. *The Geneva Papers on Risk and Insurance-Issues and Practice*, 42, 475-499. doi:10.1057/s41288-017-0057-0
- Back, A. L., Fromme, E. K., & Meier, D. E. (2019). Training clinicians with communication skills needed to match medical treatments to patient values. *Journal of the American Geriatrics Society*, 67(S2), S435-S441. doi:10.1111/jgs.15709
- Backlund, F., Chronéer, D., & Sundqvist, E. (2015). Maturity assessment: Towards continuous improvements for project-based organisations? *International Journal of Managing Projects in Business*, 8, 256-278. doi:10.1108/IJMPB-05-2014-0047
- Baia, A. P. (2015). Achieving customer specifications through process improvement using Six Sigma: Case study of NutriSoil - Portugal. *The Quality Management Journal*, 22(2), 48-60. doi:10.1080/10686967.2015.11918428
- Baily, J. (2017). Health insurance and the supply of entrepreneurs: New evidence from the affordable care act. *Journal of Small Business Economics*, 49, 627-646. doi:10.1007/s11187-017-9856-8



- Bakx, P., O'Donnell, O., & Van Doorslaer, E. (2016). Spending on health care in the Netherlands: Not going so Dutch. *Fiscal Studies*, 37, 593-625. doi:10.1111/j.1475-5890.2016.12114
- Balloni, A. J., & Targowski, A. S. (2015). Challenges and reflections on information, knowledge, and wisdom societies and sociotechnical systems. In *Enterprise Systems. Strategic, Organizational, and Technological Dimensions* (pp. 216-237). Cham, Switzerland: Springer International
- Barakat-Johnson, M., Lai, M., Wand, T., & White, K. (2018). A qualitative study of the thoughts and experiences of hospital nurses providing pressure injury prevention and management. *Collegian*, 26, 95-102. doi:10.1016/j.colegn.2018.04.005
- Barnabè, F., Guercini, J., & Perna, M. D. (2019). Assessing performance and value-creation capabilities in lean healthcare: Insights from a case study. *Public Money & Management*, 1-9. Advance online publication. doi:10.1080/09540962.2019.1598197
- Barnes, B. G., & Harp, N. L. (2018). The U.S. Medicare disproportionate share hospital program and capacity planning. *Journal of Accounting and Public Policy*, 37, 335-351. doi:10.1016/j.jaccpubpol.2018.07.005
- Bartov, E., & Konchitchki, Y. (2017). SEC filings, regulatory guidelines, and capital market consequences. *Accounting Horizons*, 31(4), 109-131. doi:10.2308/acch-51887
- Batterham, R. W., Hawkins, M., Collins, P. A., Buchbinder, R., & Osborne, R. H. (2016). Health literacy: Applying current concepts to improve health services and reduce health inequalities. *Public Health*, 132, 3-12. doi:10.1016/j.puhe.2016.01.001
- Bengtsson, M. (2016). How to plan and perform a qualitative study using content analysis. *NursingPlus Open*, 2, 8-14. doi:10.1016/j.npls.2016.01.001
- Bergman, B., Hellström, A., Lifvergren, S., & Gustavsson, S. M. (2015). An emerging science of improvement in health care. *Quality Engineering*, 27, 17-34. doi:10.1080/08982112.2015.968042
- Bernard, H. R. (2017). *Research methods in anthropology: Qualitative and quantitative approaches*. Lanham, MD: AltaMira.
- Bertomeu, J., & Marinovic, I. (2015). A theory of hard and soft information. *The Accounting Review*, 91(1), 1-20. doi:10.2308/accr-51102
- Besley, T., & Malcomson, J. M. (2018). Competition in public service provision: The role of not-for-profit providers. *Journal of Public Economics*, 162, 158-172. doi:10.1016/j.jpubeco.2018.04.004
- Bevan, M. T. (2014). A method of phenomenological interviewing. *Qualitative Health Research*, 24, 136-144. doi:10.1177/1049732313519710
- Bjorvatn, A. (2018). Private or public hospital ownership: Does it really matter? *Social Science & Medicine*, 196, 166-174. doi:10.1016/j.socscimed.2017.11.038
- Bradbury-Jones, C., Breckenridge, J., Clark, M. T., Herber, O. R., Wagstaff, C., & Taylor, J. (2017). The state of qualitative research in health and social science literature: A focused mapping review and synthesis. *International Journal of Social Research Methodology*, 20, 627-645. doi:10.1080/13645579.2016.1270583
- Brandrud, A. S., Nyen, B., Hjortdahl, P., Sandvik, L., Haldorsen, G. S. H., Bergli, M., . . . Bretthauer, M. (2017). Domains associated with successful quality improvement in healthcare—a nationwide case study. *British Medical Journal Health Services Research*, 17, 648-665. doi:10.1186/s12913-017-2454-2
- Brekke, K., Siciliani, L., & Straume, O. R. (2017). Hospital mergers with regulated prices. *The Scandinavian Journal of Economics*, 119, 597-627. doi:10.1111/sjoe.12191
- Bristowe, K., Selman, L., & Murtagh, F. E. (2015). Qualitative research methods in renal medicine: An introduction. *Nephrology Dialysis Transplantation*, 30, 1424-1431. doi:10.1093/ndt/gfu410
- Buchmueller, T. C., & Valletta, R. G. (2017). Work, health, and insurance: A shifting landscape for employers and workers alike. *Health Affairs*, 36, 214-221. doi:10.1377/hlthaff.2016.1200
- Buehler, J. W., Snyder, R. L., Freeman, S. L., Carson, S. R., & Ortega, A. N. (2018). It's not just insurance: The affordable care act and population health. *Public Health Reports*, 133(1), 34-38. doi:10.1177/0033354917743499
- Bungay, V., Oliffe, J., & Atchison, C. (2016). Addressing underrepresentation in sex work research: Reflections on designing a purposeful sampling strategy. *Qualitative Health Research*, 26, 966-978. doi:10.1177/1049732315613042

- Burns, K. A., Reber, T., Theodore, K., Welch, B., Roy, D., & Siedlecki, S. L. (2018). Enhanced early warning system impact on nursing practice: A phenomenological study. *Journal of Advanced Nursing*, 74, 1150-1156. doi:10.1111/jan.13517
- Burns, L. R., & Pauly, M. V. (2018). Transformation of the health care industry: Curb your enthusiasm? *The Milbank Quarterly*, 96(1), 57-109. doi:10.1111/1468-0009.12312
- Burns, L. W., McCullough, J. S., Wholey, D. R., Kruse, G., Kralovec, P., & Muller, R. (2015). Is the system really the solution? Operating costs in the hospital systems. *Medical Care Research and Review*, 72, 247-272. doi:10.1177/1077558715583789
- Cabral, A., Oram, C., & Allum, S. (2019). Developing nursing leadership talent - Views from the NHS nursing leadership for south-east England. *Journal of Nursing Management*, 27(1), 75-83. doi:10.1111/jonm.12650
- Callison, K., & Sicilian, P. (2018). Economic freedom and the affordable care act: Medicaid expansions and labor mobility by race and ethnicity. *Public Finance Review*, 46, 301-324. doi:10.1177/1091142116668254
- Cannon, J. N., Lamboy-Ruiz, M. A., & Watanabe, O. (2018). *The influence of ownership type and the affordable care act on earnings management in U.S. hospitals* (Working paper). doi:10.2139/ssrn.3149931
- Cao, H., Fu, T. M., Zhang, L., Henze, D. K., Miller, C. C., Lerot, C., . . . Hendrick, F. (2018). Adjoint inversion of Chinese non-methane volatile organic compound emissions using space-based observations of formaldehyde and glyoxal. *Atmospheric Chemistry and Physics*, 18, 15017-15046. doi:10.5194/acp-18-15017-2018
- Capatina, E. (2015). Life-cycle effects of health risk. *Journal of Monetary Economics*, 74, 67-88. doi:10.1016/j.jmoneco.2015.06.002
- Capps, C., Dranove, D., & Ody, C. (2018). The effect of hospital acquisitions of physician practices on prices and spending. *Journal of Health Economics*, 59, 139-152. doi:10.1016/j.jhealeco.2018.04.001
- Carman, K. G., Eibner, C., & Paddock, S. M. (2015). Trends in health insurance enrollment, 2013-2015. *Health Affairs*, 34, 1044-1048. doi:10.1377/hlthaff.2015.0266
- Carrasquillo, O., & Mueller, M. (2018). Refinement of the affordable care act: A progressive perspective. *Annual Review of Medicine*, 69, 29-39. doi:10.1146/annurev-med-090916-120540
- Carvalho, J. V., Rocha, Á., Vasconcelos, J., & Abreu, A. (2019). A health data analytics maturity model for hospitals information systems. *International Journal of Information Management*, 46, 278-285. doi:10.1016/j.ijinfomgt.2018.07.001
- Casalino, L. P., Gans, D., Weber, R., Cea, M., Tuchovsky, A., Bishop, T. F., . . . Evenson, T. B. (2016). US physician practices spend more than \$15.4 billion annually to report quality measures. *Health Affairs*, 35, 401-406. doi:10.1377/hlthaff.2015.1258
- Castillo-Montoya, M. (2016). Preparing for interview research: The interview protocol refinement framework. *The Qualitative Report*, 21, 811-831. Retrieved from <https://nsuworks.nova.edu/tqr/>
- Chakraborty, A., & Tan, K. C. (2012). Case study analysis of six sigma implementation in service organisations. *Business Process Management Journal*, 18, 992-1019. doi:10.1108/14637151211283384
- Chandra, A., Finkelstein, A., Sacarny, A., & Syverson, C. (2016). Health care exceptionalism? Performance and allocation in the US health care sector. *American Economic Review*, 106, 2110-2144. doi:10.1257/aer.20151080
- Charmaz, K. (2017). The power of constructivist grounded theory for critical inquiry. *Qualitative Inquiry*, 23(1), 34-45. doi:10.1177/1077800416657105
- Chawla, S., & Kant, R. (2017). Application of theory of constraints in service type organization. *International Journal of Advance Research and Innovation*, 5, 366-371. Retrieved from <http://www.ijari.org/>
- Chowdhury, M. F. (2015). Coding, sorting and sifting of qualitative data analysis: Debates and discussion. *Quality & Quantity*, 49, 1135-1143. doi:10.1007/s11135-014-0039-2
- Chukmaitov, A., Harless, D. W., Bazzoli, G. J., & Muhlestein, D. B. (2019). Preventable hospital admissions and 30-day all-cause readmissions: Does hospital participation in accountable care organizations improve quality of care? *American Journal of Medical Quality*, 34(1), 13-22. doi:10.1177/1062860618778786
- Ciando, S. (2018). The prevalence of service excellence and the use of business process improvement methodologies in Australian universities. *Journal of Higher Education Policy and Management*, 40(2), 121-139. doi:10.1080/1360080X.2018.1426372

- Colander, D. (2017). *Economics* (10th ed.). New York, NY: McGraw Hill Irwin.
- Colorafi, K. J., & Evans, B. (2016). Qualitative descriptive methods in health science research. *Health Environments Research & Design Journal*, 9(4), 16-25. doi:10.1177/1937586715614171
- Comi, A., & Whyte, J. (2018). Future making and visual artefacts: An ethnographic study of a design project. *Organization Studies*, 39, 1055-1083. doi:10.1177/0170840617717094
- Connelly, L. M. (2016). Trustworthiness in qualitative research. *Medsurg Nursing*, 25, 435-436. Retrieved from <http://www.medsurnursing.net/cgi-bin/WebObjects/MSNJournal.woa>
- Copestake, J. (2014). Credible impact evaluation in complex contexts: Confirmatory and exploratory approaches. *Evaluation*, 20, 412-427. doi:10.1177/1356389014550559
- Corbin, J., & Strauss, A. (2015). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (4th ed.). Thousand Oaks, CA: Sage
- Costas, J., Ponte, B., de la Fuente, D., Pino, R., & Puche, J. (2015). Applying Goldratt's theory of constraints to reduce the bullwhip effect through agent-based modeling. *Expert Systems with Applications*, 42, 2049-2060. doi:10.1016/j.eswa.2014.10.022
- Cox, J. F., III, & Robinson, E. G. (2017). Applying Goldratt's thinking processes to prevent mistakes. *Human Systems Management*, 36, 315-340. doi:10.3233/hsm-17116
- Crane, B., & Hartweg, C. J. (2019). Global talent management: A life cycle view of the interaction between human and social capital. *Journal of World Business*, 54(2), 82-92. doi:10.1016/j.jwb.2018.11.002
- Creswell, K. M., Mozaffar, H., Lee, L., Williams, R., & Sheikh, A. (2017). Workarounds to hospital electronic prescribing systems: A qualitative study in English hospitals. *British Medical Journal Quality Safety*, 26, 542-551. doi:10.1136/bmjqs-2015-005149
- Cudney, E. A., Venuthurumilli, S. S. J., Materla, T., & Antony, J. (2018). Systematic review of lean and six sigma approaches in higher education. *Total Quality Management & Business Excellence*. Advance online publication. doi:10.1080/14783363.2017.1422977
- Cypress, B. S. (2017). Rigor or reliability and validity in qualitative research: Perspectives, strategies, reconceptualization, and recommendations. *Dimensions of Critical Care Nursing*, 36, 253-263. doi:10.1097/DCC.0000000000000253
- D'Andreanmatteo, A., Ianni, L., Lega, F., & Sargiacomo, M. (2015). Lean in healthcare: A comprehensive review. *Health Policy*, 119, 1197-1209. doi:10.1016/j.healthpol.2015.02.002
- Dalton, C. M., & Warren, P. L. (2016). Cost versus control: Understanding ownership through outsourcing in hospitals. *Journal of Health Economics*, 48, 1-15. doi:10.1016/j.jhealeco.2016.02.003
- Daly, R. (2018). Hospital deals accelerate in 2018. Retrieved from <https://www.hfma.org/Content.aspx?id=60375>
- Darawsheh, W. (2014). Reflexivity in research: Promoting rigor, reliability and validity in qualitative research. *International Journal of Therapy and Rehabilitation*, 21, 560-568. doi:10.12968/ijtr.2014.21.12.560
- De Zan, G., De Toni, A. F., Fornasier, A., & Battistella, C. (2015). A methodology for the assessment of experiential learning lean: The lean experience factory case study. *European Journal of Training and Development*, 39, 332-354. doi:10.1108/EJTD-05-2014-0040
- Dean, J. (2014). Personal protective equipment. *Professional Safety*, 59(2), 41-46. Retrieved from: <http://www.asse.org/>
- Deber, R. B. (2002) Commission on the future of health care in Canada. *Delivering health care services: Public, not-for-profit, or private?* (Report No. 17). Toronto, Canada: Commission on the Future of Health Care in Canada.
- Deblois, S., & Lepanto, L. (2016). Lean and six sigma in acute care: A systematic review of reviews. *International Journal of Health Care Quality Assurance*, 29, 192-208. doi:10.1108/IJHCQA-05-2014-0058
- Deming, W. E., & Edwards E. W. (1982). *Quality, productivity, and competitive position* (Vol. 183). Cambridge, MA: Massachusetts Institute of Technology, Center for Advanced Engineering Study
- Dempsey, L., Dowling, M., Larkin, P., & Murphy, K. (2016). Sensitive interviewing in qualitative research. *Research in Nursing & Health*, 39, 480-490. doi:10.1002/nur.21743
- Dickman, S. L., Himmelstein, D. U., & Woolhandler, S. (2017). Inequality and the health-care system in the USA. *The Lancet*, 389, 1431-1441. doi:10.1016/S0140-6736(17)30398-7

- Dobkin, C., Finkelstein, A., Kluender, R., & Notowidigdo, M. J. (2018). The economic consequences of hospital admissions. *American Economic Review*, *108*, 308-352. doi:10.1257/aer.20161038
- Drucker, P. F. (2006). Knowledge-worker productivity: The biggest challenge. *IEEE Engineering Management Review*, *34*(2), 29-29. doi:10.1109/emr.2006.1679053
- Dubey, R., Gunasekaran, A., Childe, S. J., Wamba, S. F., & Papadopoulos, T. (2016). Enablers of six sigma: Contextual framework and its empirical validation. *Total Quality Management & Business Excellence*, *27*, 1346-1372. doi:10.1080/14783363.2015.1075877
- Dubrovinsky, M., & Winter, R. A. (2015). Organizational form and output quality. *Canadian Journal of Economics*, *48*, 189-206. doi:10.1111/caje.12129
- Earis, J., Garner, J., Haddock, D., Jenkins, J., & Jha, V. (2017). Medical students' unique experience of army leadership training: A qualitative study. *Journal of the Royal Army Medical Corps*, *163*, 329-332. doi:10.1136/jramc-2016-000731
- Eldenburg, L. G., Krishnan, H. A., & Krishnan, R. (2017). Management accounting and control in the hospital industry: A review. *Journal of Governmental & Nonprofit Accounting*, *6*(1), 52-91. doi:10.2308/ogna-51922
- Ellison, A., & Cohen, J. K. (2018). 224 hospital benchmarks 2018. Retrieved from <https://www.beckershospitalreview.com/lists/224-hospital-benchmarks-2018.html>
- Emanuel, E. J. (2018). The real cost of the US healthcare system. *The Journal of the American Medical Association*, *319*, 983-985. doi:10.1001/JAMA.2018.1151
- Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, *5*(1), 1-4. doi:10.11648/j.ajtas.20160501.11
- Fan, F., Hines, J. R., & Horwitz, J. R. (2016). Are pilot's property taxes for nonprofits? *Journal of Urban Economics*, *94*, 109-123. doi:10.1016/j.jue.2016.06.002
- Fassiotto, M., Maldonado, Y., & Hopkins, J. (2018). A long-term follow up of a physician leadership program. *Journal of Health, Organization, and Management*, *32*(1), 56-58. doi:10.1108/JHOM-08-2017-0208
- Fay, R. & Negangard, E. M. (2017). Manual journal entry testing: Data analytics and risk of fraud. *Journal of Accounting Education*, *38*, 37-49. doi:10.1016/j.jaccedu.2016.12.004
- Feigenbaum, A.V. 1991. *Total quality control*. New York, NY: McGraw Hill.
- Finkelstein, A., Mahoney, N., & Notowidigdi, M. J. (2018). What does (formal) health insurance do, and for whom? *Annual Review of Economics*, *10*, 261-286. doi:10.1146/annurev-economics-080217-053608
- Fisher, C. A., & Brown, A. (2017). Sensory modulation intervention and behavior support modification for the treatment of severe aggression in Huntington's disease. A single case experimental design. *Neuropsychological Rehabilitation*, *27*, 891-903. doi:10.1080/09602011.2015.1091779
- Foley, G., & Timonen, V. (2015). Using grounded theory method to capture and analyze health care experiences. *Health Services Research*, *50*, 1195-1210. doi:10.1111/1475-6773.12275
- Frean, M., Gruber, J., & Sommers, B. D. (2017). Premium subsidies, the mandate, and Medicaid expansion: Coverage effects of the affordable care act. *Journal of Health Economics*, *53*, 72-86. doi:10.1016/j.jhealeco.2017.02.004
- Freedman, S., & Lin, H. (2018). Hospital ownership type and innovation: The case of electronic medical records adoption. *Nonprofit and Voluntary Sector Quarterly*, *47*, 537-561. doi:10.1177/0899764018757025
- French, E., & Jones, J. B. (2017). Health, health insurance, and retirement: A survey. *Annual Review of Economics*, *9*, 383-409. doi:10.1146/annurev-economics-063016-103616
- Fusch, P. I., & Ness, L. R. (2015). Are we there yet? Data saturation in qualitative research. *The Qualitative Report*, *20*, 1408-1416. Retrieved from <https://nsuworks.nova.edu/tqr/>
- Gaffney, A., & McCormick, D. (2017). The affordable care act: Implications for health-care equality. *The Lancet*, *389*, 1442-1452. doi:10.1016/s0140-6736(17)30786-9
- Galvin, R. (2015). How many interviews are enough? Do qualitative interviews in building energy consumption research produce reliable knowledge? *Journal of Building Engineering*, *1*, 2-12. doi:[j.jobe.2014.12.001](https://doi.org/10.1016/j.jobe.2014.12.001)
- Gaya, H. J., & Smith, E. E. (2016). Developing a qualitative single case study in the strategic management realm: An appropriate research design. *International Journal of Business Management & Economic Research*, *7*, 529-538. Retrieved from <http://www.ijbmer.com>

- Gehman, J., Glaser, V. L., Eisenhardt, K. M., Gioia, D., Langley, A., & Corley, K. G. (2017). Finding theory–method fit: A comparison of three qualitative approaches to theory building. *Journal of Management Inquiry*, 27, 284-300. doi:10.1177/1056492617706029
- Geleyn, J. F., Mašek, J., Brožková, R., Kuma, P., Degrauwe, D., Hello, G., & Pristov, N. (2017). Single interval longwave radiation scheme based on the net exchanged rate decomposition with bracketing. *Quarterly Journal of the Royal Meteorological Society*, 143, 1313-1335. doi:10.1002/qj.3006
- Gentles, S. J., & Vilches, S. L. (2017). Calling for a shared understanding of sampling terminology in qualitative research: Proposed clarifications derived from critical analysis of a methods overview by McCrae and Pursell. *International Journal of Qualitative Methods*, 16(1), 1-7. doi:10.1177/1609406917725678
- Gibson, C. B. (2016). Elaboration, generalization, triangulation, and interpretation: On enhancing the value of mixed method research. *Organizational Research Methods*, 20, 193-223. doi:10.1177/1094428116639133
- Giddon, D. B., Donoff, R. B., Edwards, P. C., & Goldblatt, L. I. (2017). Should dental schools train dentists to routinely provide limited preventive primary medical care? Two viewpoints. *Journal of Dental Education*, 81, 561-570. doi:10.21815/JDE.016.023
- Gobillon, L., & Milcent, C. (2016). Evaluating the effect of ownership status on hospital quality: The key role of innovative procedures. *Annals of Economics and Statistics*, 121/122, 161-186. doi:10.15609/annaeconstat2009.121-122.161
- Goldratt, E. M. (1990). *Theory of constraints*. Great Barrington, MA: North River Press.
- Goldratt, E. M., & Cox, J. (2004). *The goal: A process of ongoing improvement*. Great Barrington, MA: North River Press.
- Gonzalez-Aleu, F., Van Aken, E. M., Cross, J., & Glover, W. J. (2018). Continuous improvement project within Kaizen: Critical success factors in hospitals. *The Total Quality Management Journal*, 30, 335-355. doi:10.1108/TQM-12-2017-0175
- Gowrisankaran, G., Nevo, A., & Town, R. (2015). Mergers when prices are not negotiated: Evidence from the hospital industry. *American Economic Review*, 105, 172-203. doi:10.1257/aer.20130223
- Grady, C. (2015). Institutional review boards: Purpose and challenges. *Chest*, 148, 1148-1155. doi:10.1378/chest.15-0706
- Graneheim, U. H., Lindgren, B. M., & Lundman, B. (2017). Methodological challenges in qualitative content analysis: A discussion paper. *Nurse Education Today*, 56, 29-34. doi:10.1016/j.nedt.2017.06.002
- Gregoire, T. G., & Affleck, D. L. (2018). Estimating desired sample size for simple random sampling of a skewed population. *The American Statistician*, 72, 184-190. doi:10.1080/00031305.2017.1290548
- Guerrini, A., Romano, G., Campedelli, B., Moggi, S., & Leardini, C. (2018). Public vs. private in hospital efficiency: Exploring determinants in a competitive environment. *International Journal of Public Administration*, 41, 181-189. doi:10.1080/01900692.2016.1256892
- Guest, G., Namey, E., Taylor, J., Eley, N., & McKenna, K. (2017). Comparing focus groups and individual interviews: Findings from a randomized study. *International Journal of Social Research Methodology*, 20, 693-708. doi:10.1080/13645579.2017.1281601
- Guetterman, T. C., Fetters, M. D., & Creswell, J. W. (2015). Integrating quantitative and qualitative results in health science mixed methods research through joint displays. *The Annals of Family Medicine*, 13, 554-561. doi:10.1370/afm.1865
- Gunawan, J. (2015). Ensuring trustworthiness in qualitative research. *Belitung Nursing Journal*, 1, 10-11. Retrieved from <http://belitungraya.org/BRP/index.php/bnj/>
- Habeeb, R. A. A., Nasaruddin, F., Gani, A., Hashem, I. A. T., Ahmed, E., & Imran, M. (2018). Real-time big data processing for anomaly detection: A survey. *International Journal of Information Management*, 45, 289-307. doi:10.1016/j.ijinfomgt.2018.08.006
- Hagaman, A. K., & Wutich, A. (2017). How many interviews are enough to identify metathemes in multisited and cross-cultural research? Another perspective on Guest, Bunce, and Johnson's (2006) landmark study. *Field Methods*, 29(1), 23-41. doi:10.1177/1525822X16640447
- Hallam, C. R. A., Valerdi, R., & Contreras, C. (2018). Strategic lean actions for sustainable competitive advantage. *International Journal of Quality and Reliability Management*, 35, 481-509. doi:10.1108/ijqrm-10-2016-0177

- Hardicre, J. (2014). An overview of research ethics and learning from the past. *British Journal of Nursing*, 23, 483-486. doi:10.12968/bjon.2014.23.9.483
- Harrison, A., Burrell, R., Velasquez, S., & Schreiner, L. (2017). Social media use in academic libraries: A phenomenological study. *The Journal of Academic Librarianship*, 43, 2148-256. doi:10.1016/j.acalib.2017.02.014
- Harrison, M., Ryan, T., Gardiner, C., & Jones, A. (2017). Psychological and emotional needs, assessment, and support post-stroke: A multi-perspective qualitative study. *Topics in Stroke Rehabilitation*, 24, 119-125. doi:10.1080/10749357.2016.1196908
- Hasle, P., Nielsen, A. P., & Edwards, K. (2016). Application of lean manufacturing in hospitals - The need to consider maturity, complexity, and the value concept. *Human Factors and Ergonomics in Manufacturing & Service Industries*, 26, 430-442. doi:10.1002/hfm.20668
- Heath, J., Williamson, H., Williams, L., & Harcourt, D. (2018). "It's just more personal": Using multiple methods of qualitative data collection to facilitate participation in research focusing on sensitive subjects. *Applied Nursing Research*, 43, 30-35. doi:10.1016/j.apnr.2018.06.015
- Heavey, C., Ledwith, A., & Murphy, E. (2014). Introducing a new continuous improvement framework for increased organisational return on investment. *The Total Quality Management Journal*, 26, 594-609. doi:10.1108/TQM-06-2013-0065
- Heredia Rojas, B. F. (2017). *The contingent effects of value creation processes on project value—an empirical analysis from project managers' perspective* (Doctoral dissertation, University of Sydney, Sydney, Australia). Retrieved from <http://hdl.handle.net/2123/18087>
- Hilmola, O. P., & Li, W. (2016). Throughput accounting heuristics is still adequate: Response to criticism. *Expert Systems with Applications*, 58, 221-228. doi:10.1016/j.eswa.2016.03.051
- Himmelstein, D. U., Woolhanger, S., Almbery, M., & Faulke, C. (2018). The ongoing U.S. health care crisis: A data update. *The International Journal of Health Services*, 48, 209-222. doi:10.1177/0020731418764073
- Holt, N. L., Neely, K. C., Slater, L. G., Camiré, M., Côté, J., Fraser-Thomas, J., . . . Tamminen, K. A. (2017). A grounded theory of positive youth development through sport based on results from a qualitative meta-study. *International Review of Sport and Exercise Psychology*, 10(1), 1-49. doi:10.1080/1750984x.2016.1180704
- Honda, A. C., Bernardo, V. Z., Gerolamo, M. C., & Davis, M. M. (2018). How lean six sigma principles improve hospital performance. *Quality Management Journal*, 25(2), 70-82. doi:10.1080/10686967.2018.1436349
- Houghton, C., Murphy, K., Shaw, D., & Casey, D. (2015). Qualitative case study data analysis: An example from practice. *Nurse Researcher*, 22(5), 8-12. doi:10.7748/nr.22.5.8.e1307
- Huang, H., Dao, M., & Sun, W. (2017). The timeliness of financial reporting and fair values: Evidence from U.S. banks. *Review of Pacific Basin Financial Markets and Policies*, 20(1), 1-30. doi:10.1142/S0219091517500060
- Hutabarat, F. M., & Flora, J. (2015). Exploring factors affecting stock price of Indonesia state owned bank listed at Indonesia stock exchange. *Academic Research International*, 6(5), 42-52. Retrieved from: <http://www.journals.savap.org.pk/>
- Ikeziri, L. M., Souza, F. B. D., Gupta, M. C., & de Camargo Fiorini, P. (2018). Theory of constraints: Review and bibliometric analysis. *International Journal of Production Research*. Advance online publication. doi:10.1080/00207543.2018.1518602
- Iyede, R., Fallon, E. F., & Donnellan, P. (2018). An exploration of the extent of lean six sigma implementation in the west of Ireland. *International Journal of Lean Six Sigma*, 9, 444-462. doi:10.1108/IJLSS-02-2017-0018
- Jacobs, B. W., Swink, M., & Linderman, K. (2015). Performance effects of early and late six sigma adoptions. *Journal of Operations Management*, 36, 244-257. doi:10.1016/j.jom.2015.01.002
- Jakovljevic, M., & Ogura, S. (2016). Health economics at the crossroads for centuries – From the past to the future. *Frontiers in Public Health*, 4, 115-119. doi:10.3389/fpubh.2016.00115
- Jamas, F., & Olausson, S. (2018). Designing for care: Employing ethnographic design methods at special care homes for young offenders - a pilot study. *Design for Health*, 2, 127-141. doi:10.1080/24735132.2018.1456783
- Janvrin, D., & Watson, M. W. (2017). "Big data": A new twist to accounting. *Journal of Accounting Education*, 38, 3-8. doi:10.1016/j.jaccedu.2016.12.00

- Javrin, D., & Mascha M. F. (2014). The financial close process: Implications for future research. *International Journal of Accounting Information Systems*, 15, 381-399. doi:10.1016/j.accinf.2014.05.007
- Jentoft, N., & Olsen, T. S. (2017). Against the flow in data collection: How data triangulation combined with a 'slow' interview technique enriches data. *Qualitative Social Work*, 18, 179-193. doi:10.1177/1473325017712581
- Johnson, J. S. (2015). Qualitative sales research: An exposition of grounded theory. *Journal of Personal Selling & Sales Management*, 35, 262-273. doi:10.1080/08853134.2014.954581
- Joslin, R., & Müller, R. (2016). Identifying interesting project phenomena using philosophical and methodological triangulation. *International Journal of Project Management*, 34, 1043-1056. doi:10.1016/j.ijproman.2016.05.005
- Jung-Lang, C. (2013). Integrating six sigma with business strategy: An empirical study of industries in Taiwan. *International Journal of Management*, 17, 22-32. doi:10.1108/13683041311311347
- Kallio, H., Pietilä, A. M., Johnson, M., & Kangasniemi, M. (2016). Systematic methodological review: Developing a framework for a qualitative semi-structured interview guide. *Journal of Advanced Nursing*, 72, 2954-2965. doi:10.1111/jan.13031
- Kamalluarifin, W. F. S.W. (2018). The influence of corporate governance and firm characteristics on the timeliness of corporate internet reporting by top 95 companies in Malaysia. *Procedia Economics and Finance*, 35, 156-165. doi:10.1016/S2212-5671(16)00020-4
- Karabarbounis, M. (2016). A road map for efficiently taxing heterogeneous agents. *American Economic Journal of Macroeconomics*, 8, 182-214. doi:10.1257/mac.20140274
- Kasim, N. I., Musa, M. A., Razali, A. R., Noor, N. M., & Saidin, W. A. N. W. (2015). Improvement of overall equipment effectiveness (OEE) through implementation of total productive maintenance (TPM) in manufacturing industries. *Applied Mechanics & Materials*, 761, 180-185. doi:10.4028/www.scientific.net/AMM.761.180
- Kassan, A., Goopy, S., Green, A., Arthur, N., Nutter, S., Russell-Mayhew, S., . . . Silversides, H. (2018). Becoming new together: Making meaning with newcomers through an arts-based ethnographic research design. *Qualitative Research in Psychology*, 24(3), 1-18. doi:10.1080/14780887.2018.1442769
- Kaufmann, P., & O'Rourke, P. P. (2015). Central institutional review board review for an academic trial network. *Academic Medicine: Journal of the Association of American Medical Colleges*, 90, 321-323. doi:10.1097/ACM.0000000000000562
- Kehoe, R. R., & Wright, P. M. (2013). The impact of high-performance human resource practices on employees' attitudes and behaviors. *Journal of Management*, 39, 366-391. doi:10.1177/0149206310365901
- Khalil, M., & Ebner, M. (2016). De-identification in learning analytics. *Journal of Learning Analytics*, 3, 129-138. doi:10.18608/jla.2016.31.8
- Khoja, F. (2016). Significance of internet of things (IoT): Preview of Porter's five forces model. *International Journal of Scientific & Engineering Research*, 7, 962-954. Retrieved from <https://www.ijser.org/>
- Kim, H., Sefcik, J. S., & Bradway, C. (2017). Characteristics of qualitative descriptive studies: A systematic review. *Research in Nursing & Health*, 40(1), 23-42. doi:10.1002/nur.21768
- Kim, S. J., Park, E. C., Kim, T. H., Yoo, J. W., & Lee, S. G. (2015). Mortality, length of stay, and inpatient charges for heart failure patients at public versus private hospitals in South Korea. *Yonsei Medical Journal*, 56, 853-861. doi:10.3349/ymj.2015.56.3.853
- Kirch, D. G., & Petelle, K. (2017). Addressing the physician shortage: The peril of ignoring demography. *The Journal of the American Medical Association*, 317, 1947-1948. doi:10.1001/JAMA.2017.2714
- Kirkwood, A., & Price, L. (2013). Examining some assumptions and limitations of research on the effects of emerging technologies for teaching and learning in higher education. *British Journal of Educational Technology*, 44, 536-543. doi:10.1111/bjet.12049
- Klinke, M. E., Hafsteinsdóttir, T. B., Thorsteinsson, B., & Jonsdóttir, H. (2014). Living at home with eating difficulties following stroke: A phenomenological study of younger people's experiences. *Journal of Clinical Nursing*, 23, 250-260. doi:10.1111/jocn.12401
- Kobus, J., Westner, M., & Strahinger, S. (2017). Change management lessons learned for lean IT implementations. *International Journal of Information Systems and Project Management*, 5(1), 47-60. doi:10.12821/ijispm050103



- Koller, D., Khan, N., & Barrett, S. (2015). Pediatric perspectives on diabetes self-care: A process of achieving acceptance. *Qualitative Health Research*, 25, 264-275. doi:10.1177/1049732314551057
- Kumar, R., & Kumar, V. (2016). Evaluation and benchmarking of lean manufacturing system environment: A graph theoretical approach. *Uncertain Supply Chain Management*, 4, 147-160. doi:10.5267/j.uscm.2015.10.003
- Kuruvilla, S. J. (2017). Theory of constraints and the thinking process. *International Journal of Business Insights & Transformation*, 11(1), 10-14. Retrieved from <http://www.ijbit.org/>
- Lamberson, P. J., & Page, S. E. (2017). First mover or higher quality? Optimal product strategy in markets with positive feedbacks. *Journal of Economics and Management Strategy*, 27(1), 40-52. doi:10.1111/jems.12231
- Lange, M. M., Rogers, W., & Dodds, S. (2013). Vulnerability in research ethics: A way forward. *Bioethics*, 27, 333-340. doi:10.1111/bioe.12032
- Laureani, A., & Anthony, J. (2012). Critical success factors for the effective implementation of lean six sigma. *International Journal of Lean Six Sigma*, 3, 274-283. doi:10.1108/20401461211284743
- Leaper, D. J., & Edmiston, C. E. (2017). World health organization: Global guidelines for the prevention of surgical site infection. *Journal of Hospital Infection*, 95, 135-136. doi:10.1016/j.jhin.2016.12.016
- Lee, J. Y., McFadden, K. L., & Gowen III, C. R. (2018). An exploratory analysis for lean and six sigma implementation in hospitals: Together is better?. *Health Care Management Review*, 43, 182-192. doi:10.1097/HMR.0000000000000140
- LeMahieu, P. G., Nordstrum, L. E., & Cudney, E. A. (2017). Six sigma in education. *Quality Assurance in Education*, 25, 91-108. doi:10.1108/QAE-12-2016-0082
- Leung, L. (2015). Validity, reliability, and generalizability in qualitative research. *Journal of Family Medicine and Primary Care*, 4, 324-327. doi:10.4103/2249-4863.161306
- Levitt, H. M., Motulsky, S. L., Wertz, F. J., Morrow, S. L., & Ponterotto, J. G. (2017). Recommendations for designing and reviewing qualitative research in psychology: Promoting methodological integrity. *Qualitative Psychology*, 4(1), 2-22. doi:10.1037/qup0000082
- Lewis, S. (2015). Qualitative inquiry and research design: Choosing among five approaches. *Health Promotion Practice*, 16, 473-475. doi:10.1177/1524839915580941
- Liao, H., & Hitchcock, J. (2018). Reported credibility techniques in higher education evaluation studies that use qualitative methods: A research synthesis. *Evaluation and Program Planning*, 68, 157-165. doi:10.1016/j.evalprogplan.2018.03.005
- Lin, H. F., Su, J. Q., & Higgins, A. (2016). How dynamic capabilities affect adoption of management innovations. *Journal of Business Research*, 69, 862-876. doi:10.1016/j.jbusres.2015.07.004
- Liu, L., & Zhang, Y. (2018). Does non-employment based health insurance promote entrepreneurship? Evidence from a policy experiment in China. *Journal of Comparative Economics*, 46, 270-283. doi:10.1016/j.jce.2017.04.003
- Locke, K. (2015). Pragmatic reflections on a conversation about grounded theory in management and organization studies. *Organizational Research Methods*, 18, 612-619. doi:10.1177/1094428115574858
- Lone, H. A., & Tailor, R. (2017). Estimation of population variance in simple random sampling. *Journal of Statistics and Management Systems*, 20(1), 17-38. doi:10.1080/09720510.2016.1187923
- Lotz, J. D., Jox, R. J., Borasio, G. D., & Führer, M. (2015). Pediatric advance care planning from the perspective of health care professionals: A qualitative interview study. *Palliative Medicine*, 29, 212-222. doi:10.1177/0269216314552091
- Lovelace, B. (2018). Hospital profitability sinks to levels not seen since the financial crisis: Moody's. *CNBC*. Retrieved from <https://www.cnbc.com/2018/04/24/hospital-profitability-sinks-to-levels-not-seen-since-financial-crisis.html>
- Lowe, A., Norris, A. C., Farris, A. J., & Babbage, D. R. (2018). Quantifying thematic saturation in qualitative data analysis. *Field Methods*, 30, 191-207. doi:10.1177/1525822X17749386
- Luiz, O. R., Souza, F. B. D., Luiz, J. V. R., & Jugend, D. (2018). Linking the critical chain project management literature. *International Journal of Managing Projects in Business*, 20(1), 17-38. doi:10.1108/IJMPB-03-2018-0061



- Ly, D. P., & Cutler, D. M. (2018). Factors of U.S. hospitals associated with improved profit margins: An observational study. *Journal of General Internal Medicine*, *33*, 1020-1027. doi:10.1007/s11606-018-4347-4
- Mabin, V., Yee, J., Babington, S., Caldwell, V., & Moore, R. (2017). Using the theory of constraints to resolve long-standing resource and service issues in a large public hospital. *Health Systems*, *7*(3), 1-20. doi:10.1080/20476965.2017.1403674
- Mackenzie, L. A., & Byles, J. E. (2018). Circumstances of falls with fractured femur in residents of Australian nursing homes: An analysis of falls reports. *Journal of Aging and Health*, *30*, 738-757. doi:10.1177/0898264317690667
- Madera, J. M. (2013). Facial stigmas in dyadic selection interviews: Affective and behavioral reactions toward a stigmatized applicant. *Journal of Hospitality and Tourism Research*, *40*, 456-465. doi:10.1177/1096348013503996
- Malone, H., Nicholl, H., & Tracey, C. (2014). Awareness and minimization of systematic bias in research. *British Journal of Nursing*, *23*, 279-282. doi:10.12968/bjon.2014.23.5.279
- Malterud, K., Siersma, V. D., & Guassora, A. D. (2016). Sample size in qualitative interview studies: Guided by information power. *Qualitative Health Research*, *26*, 1753-1760. doi:10.1177/1049732315617444
- Manolov, R., & Moeyaert, M. (2017). Recommendations for choosing single-case data analytical techniques. *Behavior Therapy*, *48*(1), 97-114. doi:10.1016/j.beth.2016.04.008
- Marzagão, D. S. L., & Carvalho, M. M. (2016). Critical success factors for six sigma projects. *International Journal of Project Management*, *34*, 1505-1518. doi:10.1016/j.ijproman.2016.08.005
- Masterson, L. (2018). Hospital operating margins dropped 39% over 3 years. Retrieved from <https://www.healthcarediver.com/news/hospital-operating-margins-dropped-39-over-3-years/532205/>
- Matthews, R. L., & Marzec, P. E. (2017). Continuous, quality and process improvement: Disintegrating and reintegrating operational improvement? *Total Quality Management & Business Excellence*, *28*, 296-317. doi:10.1080/14783363.2015.1081812
- Mayer, I. (2015). Qualitative research with a focus on qualitative data analysis. *International Journal of Sales, Retailing & Marketing*, *4*(9), 53-67. Retrieved from <http://www.ijstrm.com/>
- McCrae, N., & Purssell, E. (2016). Is it really theoretical? A review of sampling in grounded theory studies in nursing journals. *Journal of Advanced Nursing*, *72*, 2284-2293. doi:10.1111/jan.12986
- McCusker, K., & Gunaydin, S. (2015). Research using qualitative, quantitative, or mixed methods and choice based on the research. *Perfusion*, *30*, 537-542. doi:10.1177/0267659114559116
- McIntosh, M. J., & Morse, J. M. (2015). Situating and constructing diversity in semistructured interviews. *Global Qualitative Nursing Research*, *2*(1), 1-12. doi:10.1177/2333393615597674
- McIvor, R. (2016). An analysis of the application of process improvement techniques in business process outsourcing. *International Journal of Quality & Reliability Management*, *33*, 321-343. doi:10.1108/IJQRM-04-2014-0045
- McKinney, E., Jr., Yoos, C. J., II., & Snead, K. (2017). The need for 'skeptical' accountants in the era of big data. *Journal of Accounting Education*, *38*, 63-80. doi:10.1016/j.jaccedu.2016.12.007
- Meena, M. L., Jain, R., Kumar, P., Gupta, S., & Dangayach, G. S. (2018). Process improvement in an Indian automotive part manufacturing company: A case study. *International Journal of Productivity and Quality Management*, *23*, 524-551. doi:10.1504/IJPM.2018.090263
- Megnín-Viggars, O., Symington, I., Howard, L. M., & Pilling, S. (2015). Experience of care for mental health problems in the antenatal or postnatal period for women in the UK: A systematic review and meta-synthesis of qualitative research. *Archives of Women's Mental Health*, *18*, 745-759. doi:10.1007/s00737-015-0548-6
- Meyer, H. (2016). For-profit systems blaze separate path to efficiency and quality. *Modern Healthcare*, *46*(22). Retrieved from <http://www.modernhealthcare.com/>
- Miller, L. R., & Benjamin, D. K. (2018). *Economics of macro issues* (8th ed.) Upper Saddle River, NJ: Pearson
- Miller, W. J., Duesing, R. J., Lowery, C. M., & Sumner, A. T. (2018). The quality movement from six perspectives. *The Total Quality Management Journal*, *30*, 182-196. doi:10.1108/TQM-10-2017-0113
- Mitchell, M. L., & Jolley, J. M. (2010). *Research design explained* (7th ed.). Boston, MA: Wadsworth.

- Mitchell, K. R., & Wellings, K. (2013). Measuring sexual function in community surveys: Development of a conceptual framework. *Journal of Sex Research, 50*(1), 17-28. doi:10.1080/00224499.2011.621038
- Modi, K., Lowalekar, H., & Bhatta, N. M. K. (2018). Revolutionizing supply chain management the theory of constraints way: A case study. *International Journal of Production Research*. Advance online publication. doi:10.1080/00207543.2018.1523579
- Mohamed, A. F., & Mwanyota, M. J. (2018). Effects of selected lean management practices on financial performance of private hospitals in Mombasa County, Kenya. *International Journal of Supply Chain Management, 3*(2), 1-21. Retrieved from <https://www.iprjb.org/>
- Mohammadi, H., Ghazanfari, M., Nozari, H., & Shafiezd, O. (2015). Combining the theory of constraints with system dynamics: A general model (case study of the subsidized milk industry). *International Journal of Management Science and Engineering Management, 10*, 102-108. doi:10.1080/17509653.2014.920123
- Moldovan-Borsos, R., & Matei, C. (2016). Organizational structure in impasse. *Electrotehnica, Electronica, Automatica, 64*(2), 165-169. Retrieved from [http://www.editura-electra.ro/ro/d/1/p/eea\\_indexare](http://www.editura-electra.ro/ro/d/1/p/eea_indexare)
- Morgan, S., Pullon, S., & McKinlay, E. (2015). Observation of interprofessional collaborative practice in primary care teams: An integrative literature review. *International Journal of Nursing Studies, 52*, 1217-1230. doi:10.1016/j.ijnurstu.2015.03.008
- Moriya, A. S., Vogt, W. B., & Gaynor, M. (2010). Hospital prices and market structure in the hospital industries. *Health Economics, Policy and Law, 5*, 459-479. doi:10.1017/S1744133110000083
- Morse, J. M. (2015). Critical analysis of strategies for determining rigor in qualitative inquiry. *Qualitative Health Research, 25*, 1212-1222. doi:10.1177/1049732315588501
- Morse, J. M., & Coulehan, J. (2015). Maintaining confidentiality in qualitative, publications. *Qualitative Health Research, 25*, 151-152. doi:10.1177/1049732314563489
- Moser, A., & Korstjens, I. (2018). Series: Practical guidance to qualitative research. Part 3: Sampling, data collection, and analysis. *European Journal of General Practice, 24*(1), 9-18. doi:10.1080/13814788.2017.1375091
- Myrelid, A., & Olhager, J. (2015). Applying modern accounting techniques in complex manufacturing. *Industrial Management & Data Systems, 115*, 402-418. doi:10.1108/IMDS-09-2014-0250
- Nelson, J. (2017). Using conceptual depth criteria: Addressing the challenge of reaching saturation in qualitative research. *Qualitative Research, 17*, 554-570. doi:10.1177/1468794116679873
- Ngubevana, L. (2017). Sustainable development dilemmas of biofuels research and production: A snapshot in South Africa. *International Journal of Energy Optimization and Engineering, 6*(2), 24-41. doi:10.4018/IJEOE.2017040102
- Nguyen, T. Q. T. (2015). Conducting semistructured interviews with the Vietnamese. *Qualitative Research Journal, 15*(1), 35-46. doi:10.1108/QRJ-04-2014-0012
- Noble, H., & Smith, J. (2015). Issues of validity and reliability in qualitative research. *Evidence-Based Nursing, 18*(2), 34-35. doi:10.1136/eb-2015-102054
- Nolan, S., Hendricks, J., Williamson, M., & Ferguson, S. (2018). Using narrative inquiry to listen to the voices of adolescent mothers in relation to their use of social networking sites (SNS). *Journal of Advanced Nursing, 74*, 743-751. doi:10.1111/jan.13458
- Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods, 16*(1), 1-10. doi:10.1177/1609406917733847
- Obama, B. (2016). United States health care reform: Progress to date and next steps. *The Journal of the American Medical Association, 316*, 525-532. doi:10.1001/JAMA.2016.9797
- Onwuegbuzie, A., & Collins, K. (2017). The role of sampling in mixed methods-research. *Kölner Zeitschrift für Soziologie & Sozialpsychologie, 69*, 133-156. doi:10.1007/s11577-017-0455-0
- Paine, G. (2015). A pattern-generating tool for use in semistructured interviews. *The Qualitative Report, 20*, 468-481. Retrieved from [https://nsuworks.nova.edu/tqr\\_home/](https://nsuworks.nova.edu/tqr_home/)
- Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health and Mental Health Services Research, 42*, 533-544. doi:10.1007/s10488-013-0528-y

- Panizzolo, R. (2016). Theory of constraints (TOC) production and manufacturing performance. *International Journal of Industrial Engineering and Management*, 7(1), 15-23. Retrieved from [www.iim.ftn.uns.ac.rs/ijiem\\_journal.php](http://www.iim.ftn.uns.ac.rs/ijiem_journal.php)
- Papanicolas, I., Woskie, L. R., & Jha, A. K. (2018). Health care spending in the United States and other high-income countries. *The Journal of the American Medical Association*, 319, 1024-1039. doi:10.1001/JAMA.2018.1150
- Park, J. D., Kim, E., & Werner, R. M. (2015). Inpatient hospital charge variability of U.S. hospitals. *Journal of General Internal Medicine*, 30, 1627-1632. doi:10.1007/s11606-015-3352-0
- Parkhi, S., Tamraparni, M., & Punjabi, L. (2016). Throughput accounting: An overview and framework. *International Journal of Services and Operations Management*, 25(1), 1-20. doi:10.1504/ijssom.2016.078068
- Patel, M., & Desi, D. A. (2018). Critical review and analysis of measuring success of six sigma implementation in manufacturing sector. *International Journal of Quality & Reliability Management*, 35, 1519-1545. doi:10.1108/IJQRM-04-2017-0081
- Patton, M. Q. (2015). *Purposeful sampling and case selections: Overview of strategies and options. Qualitative research and evaluation methods* (4th ed). Thousand Oaks, CA: Sage
- Pauly, M., & Redisch, M. (1973). The not-for-profit hospital as a physicians' cooperative. *The American Economic Review*, 63(1), 87-99. Retrieved from <https://www.aeaweb.org/journals/>
- Pelgrin, F., & St-Armour, P. (2016). Life cycle responses to health insurance status. *Journal of Health Economics*, 49(1), 76-96. doi:10.1016/j.jhealeco.2016.06.007
- Pereira, H. (2012). Rigor in phenomenological research: Reflections of a novice nurse researcher. *Nurse Researcher*, 19(1), 16-19. doi:10.7748/nr2012.04.19.3.16.c9054
- Pérez Campdesuñer, R., Pérez Pravia, M., Sánchez Rodríguez, A., García Vidal, G., & Martínez Vivar, R. (2017). Application of a methodology based on the theory of constraints in the sector of tourism services. *Journal of Industrial Engineering and Management*, 10(1), 7-27. doi:10.3926/jiem.2089
- Perrault, E. K., & Nazione, S. A. (2016). Informed consent - uninformed participants: Shortcomings of online social science consent forms and recommendations for improvement. *Journal of Empirical Research on Human Research Ethics*, 11, 274-280. doi:10.1177/1556264616654610
- Pezeshkan, A., Fainshmidt, S., Nair, A., Frazier, M. L., & Markowski, E. (2016). An empirical assessment of the dynamic capabilities - performance relationship. *Journal of Business Research*, 69, 2950-2956. doi:10.1016/j.jbusres.2015.10.152
- Pickup, J. C., Holloway, M. F., & Samsi, K. (2015). Real-time continuous glucose monitoring in Type 1 diabetes: A qualitative framework analysis of patient narratives. *Diabetes Care*, 38, 544-550. doi:10.2337/dc14-1855
- Pihlajamaa, M., Kaipia, R., Säilä, J., & Tanskanen, K. (2017). Can supplier innovations substitute for internal R&D? A multiple case study from an absorptive capacity perspective. *Journal of Purchasing and Supply Management*, 23, 242-255. doi:10.1016/j.pursup.2017.08.002
- Pines, J. M., Zocchi, M., Moghtaderi, A., Black, B., Farmer, S., Hufstetler, G., . . . Pilgrim, R. (2016). Medicaid expansion in 2014 did not increase emergency department use but did change the insurance payer mix. *Health Affairs*, 35, 1480-1486. doi:10.1377/hlthaff.2015.1632
- Porter, K. M., Cho, M. K., Kraft, S. A., Korngiebel, D. M., Constantine, M., Lee, S. S. J., . . . Diekema, D. (2017). Research on medical practices (ROMP): Attitudes of IRB personnel about randomization and informed consent. *IRB: Ethics & Human Research*, 39(1). Retrieved from <https://www.thehastingscenter.org/publications-resources/irb-ethics-human-research/>
- Pracht, E. E., Langland-Orban, B., & Ryan, J. L. (2018). The probability of hospitalizations for mild to moderate injuries by trauma center ownership type. *Health Research and Educational Trust*, 53(1), 35-48. doi:10.1111/1475-6773.12646
- Pretorius, P. (2014). Introducing in-between decision points to TOC's five focusing steps. *International Journal of Production Research*, 52, 496-506. doi:10.1080/00207543.2013.836612
- Rahman, S. U. (1998). Theory of constraints: A review of the philosophy and its applications. *International Journal of Operations & Production Management*, 18, 336-355. doi:10.1108/01443579810199720
- Ramírez, Y. W., & Nembhard, D. A. (2004). Measuring knowledge worker productivity: A taxonomy. *Journal of Intellectual Capital*, 5, 602-628. doi:10.1108/14691930410567040

- Ranney, M. L., Meisel, Z. F., Choo, E. K., Garro, A. C., Sasson, C., & Morrow Guthrie, K. (2015). Interview-based qualitative research in emergency care Part II: Data collection, analysis and results reporting. *Academic Emergency Medicine*, 22, 1103-1112. doi:10.1111/acem.12735
- Ridde, V., Yaogo, M., Zongo, S., Somé, P. A., & Turcotte-Tremblay, A. M. (2018). Twelve months of implementation of health care performance-based financing in Burkina Faso: A qualitative multiple case study. *The International Journal of Health Planning and Management*, 33, 153-167. doi:10.1002/hpm.2439
- Rihter, J. D., Zivkov, E., & Nerandzic, B. (2017). *Improving the process of managing by accelerating financial reporting through implementation of fast closing process*. Paper presented at the XVII International Scientific Conference on Industrial Systems (IS '17), University of Novi Sad, Faculty of Technical Sciences, Novi Sad, Serbia. Retrieved from <https://www.iim.ftn.uns.ac.rs/is17/papers/77.pdf>
- Ringov, D. (2017). Dynamic capabilities and firm performance. *Long Range Planning*, 50, 653-664. doi:10.1016/j.lrp.2017.02.005
- Roberts, E. T., Chernew, M. E., & McWilliams, J. M. (2017). Market share matters: Evidence of insurer and provider bargaining power over prices. *Health Affairs*, 36, 141-148. doi:10.1377/hlthaff.2016.0479
- Roberts, J. P., Fisher, T. R., Trowbridge, M. J., & Bent, C. (2016). A design thinking framework for healthcare management and innovation. *Healthcare*, 4(1), 11-14. doi:10.1016/j.hjdsi.2015.12.002
- Roberts, L. D. (2015). Ethical issues in conducting qualitative research in online communities. *Qualitative Research in Psychology*, 12, 314-325. doi:10.1080/14780887.2015.1008909
- Rocco, P., Kelly, A. S., Beland, D., & Kinane, M. (2017). The new politics of US health care prices: Institutional reconfiguration and the emergence of all-payer claims databases. *Journal of Health Politics, Policy, and Law*, 42(1), 5-52. doi:10.1215/03616878-3702746
- Rojas-García, A., Turner, S., Pizza, E., Hudson, E., Thomas, J., & Raine, R. (2018). Impact and experiences of delayed discharge: A mixed-studies systematic review. *Health Expectations*, 21(1), 41-56. doi:10.1111/hex.12619
- Ronen, B., Pliskin, J. S., & Pass, S. (2018). *The hospital and clinic improvement handbook: Using lean and the theory of constraints for better healthcare delivery*. Oxford, NY: Oxford University Press.
- Rosenthal, E. (2017). *An American sickness: How healthcare became big business and how you can take it back*. New York, NY: Penguin Press.
- Rosenthal, M. (2016). Qualitative research methods: Why, when, and how to conduct interviews and focus groups in pharmacy research, *Currents in Pharmacy Teaching and Learning*, 8, 509-516. doi:10.1016/j.cptl.2016.03.021.
- Rosko, M., Wong, H. S., & Mutter, R. (2016). Characteristics of high- and low-efficiency hospitals. *Medical Care Research and Review*, 75, 454-478. doi:10.1177/1077558716689197
- Rotarou, E. S., & Sakellariou, D. (2017). Neoliberal reforms in health systems and the construction of lasting inequalities in health care: A case study from Chile. *Health Policy*, 121, 495-503. doi:10.1016/j.healthpol.2017.03.005
- Rowlands, T., Waddell, N., & McKenna, B. (2016). Are we there yet? A technique to determine theoretical saturation. *Journal of Computer Information Systems*, 56(1), 40-47. doi:10.1080/08874417.2015.11645799
- Rudnicki, M., Armstrong, J. H., Clark, C., Marcus, S. G., Sacks, L., Moser, A. J., & Reid-Lombardo, K. (2016). Expected and unexpected consequences of the affordable care act: The impact on patients and surgeons – pro and con. *Journal of Gastrointestinal Surgery*, 20, 351-360. doi:10.1007/s11605-015-3032-8
- Salsbury, S. A., Goertz, C. M., Twist, E. J., & Lisi, A. J. (2018). Integration of doctors of chiropractic into private sector health care facilities in the United States: A descriptive survey. *Journal of Manipulative and Physiological Therapeutics*, 41, 149-155. doi:10.1016/j.jmpt.2017.10.003
- Sanjika, T. M., & Bezuidenhout, C. N. (2016). A primary influence vertex approach to identify driving factors in complex integrated agri-industrial systems – an example from sugarcane supply and processing systems. *International Journal of Production Research*, 54, 4506-4519. doi:10.1080/00207543.2015.1064552
- Sarpawari, A., Avorn, J., & Kesselheim, A. S., (2018). An incomplete prescription: President Trump's plan to address high drug prices. *The Journal of the American Medical Association*, 319, 2373-2374. doi:10.1001/JAMA.2018.7424

- Satwinder, S., Darwish, T. K., & Potočnik, K. (2016). Measuring organization performance: A case for subjective measures. *British Journal of Management*, 27, 212-224. doi:10.1111/1467-8551.12126
- Saunders, B., Sim, J., Kingstone, T., Baker, S., Waterfield, J., Bartlam, B., . . . Jinks, C. (2018). Saturation in qualitative research: Exploring its conceptualization and operationalization. *Quality & Quantity*, 52, 1893-1907. doi:10.1007/s11135-017-0574-8
- Schlesinger, J. J., Burdick, K., Baum, S., Bellomy, M., Mueller, D., MacDonald, A., . . . Burger, C. (2018). Rethinking clinical workflow. *Anesthesiology Clinics*, 36, 99-116. doi:10.1016/j.anclin.2017.10.008
- Schmitt, M. (2018). Multimarket contact in the hospital industry. *American Economic Journal: Economic Policy*, 10, 361-387. doi:10.1257/pol.20170001
- Shakibaei, E. (2019). Role of a hospital accreditation program in developing a process management system: A qualitative study. *International Journal of Health Care Quality Assurance*, 32, 120-136. doi:10.1108/IJHCQA-01-2018-0002
- Shan, L. C., Panagiotopoulos, P., Regan, Á., De Brún, A., Barnett, J., Wall, P., & McConnon, Á. (2015). Interactive communication with the public: Qualitative exploration of the use of social media by food and health organizations. *Journal of Nutrition Education and Behavior*, 47, 104-108. doi:10.1016/j.jneb.2014.09.004
- Shokri, A., Waring, T. S., & Nabhani, F. (2016). Investigating the readiness of people in manufacturing SMEs to embark on Lean Six Sigma projects: An empirical study in the German manufacturing sector. *International Journal of Operations & Production Management*, 36, 850-878. doi:10.1108/IJOPM-11-2014-0530
- Sims, T., & Wan, H. (2017). Constraint identification techniques for lean manufacturing systems. *Robotics and Computer-Integrated Manufacturing*, 43, 50-58. doi:10.1016/j.rcim.2015.12.005
- Singh, M. P., Meena, R., & Panwar, A. (2016). A survey on the adoption of lean practices in Indian manufacturing sector. *International Journal of Industrial Engineering*, 7(2), 52-62. Retrieved from <http://www.iaeme.com/IJIERD>
- Sloan, F. A., & Vraciu, R. A. (1983). Investor-owned and not-for-profit hospitals: Addressing some issues. *Health Affairs*, 2(1), 25-37. doi:10.1377/hlthaff.2.1.25
- Smith, B. (2018). Generalizability in qualitative research: Misunderstandings, opportunities and recommendations for the sport and exercise sciences. *Qualitative Research in Sport, Exercise and Health*, 10, 137-149. doi:10.1080/2159676X.2017.1393221
- Smith, B., & McGannon, K. R. (2018). Developing rigor in qualitative research: Problems and opportunities within sport and exercise psychology. *International Review of Sport and Exercise Psychology*, 11, 101-121. doi:10.1080/1750984X.2017.1317357
- Smith, M., Paton, S., & MacBryde, J. (2018). Lean implementation in a service factory: Views from the front-line. *Production Planning & Control*, 29, 280-288. doi:10.1080/09537287.2017.1418455
- Sridharan, S. (2015). Volatility forecasting using financial statement information. *The Accounting Review*, 90, 2079-2106. doi:10.2308/accr-51025
- Stewart, H., Gapp, R., & Harwood, I. (2017). Exploring the alchemy of qualitative management research: Seeking trustworthiness, credibility and rigor through crystallization. *The Qualitative Report*, 22(1), 1-19. Retrieved from <https://nsuworks.nova.edu/>
- Stone, L. (2013). Making sense of medically unexplained symptoms in general practice: A grounded theory study. *Mental Health in Family Medicine*, 10, 101-111. Retrieved from <http://www.radcliffe-oxford.com>
- Strand, R., & Freeman, R. E. (2015). Scandinavian cooperative advantage: The theory and practice of stakeholder engagement in Scandinavia. *Journal of Business Ethics*, 127(1), 65-85. doi:10.1007/s10551-014-2224-6
- Sutton, J., & Austin, Z. (2015). Qualitative research: Data collection, analysis, and management. *The Canadian Journal of Hospital Pharmacy*, 68, 226-231. doi:10.4212/cjhp.v68i3.1456
- Swanson, D., Goel, L., Francisco, K., & Stock, J. (2017). Applying theories from other disciplines to logistics and supply chain management: A systematic literature review. *Transportation Journal*, 56, 299-356. doi:10.5325/transportationj.56.3.0299
- Sweeney, A., Clarke, N., & Higgs, M. (2019). Shared leadership in commercial organizations: A systematic review of definitions, theoretical frameworks and organizational outcomes. *International Journal of Management Reviews*, 21, 115-136. doi:10.1111/ijmr.12181

- Symon, G., Cassell, C., & Johnson, P. (2018). Evaluative practices in qualitative management research: A critical review. *International Journal of Management Reviews*, 20, 134-154. doi:10.1111/ijmr.12120
- Tate, R. L., Perdices, M., Rosenkoetter, U., Shadish, W., Vohra, S., Barlow, D. H., . . . Sampson, M. (2016). The single-case reporting guideline in behavioral interventions (SCRIBE) 2016 statement. *Aphasiology*, 30, 862-876. doi:10.1080/02687038.2016.1178022
- Taylor, M. F., Deuchar, R., & van der Leun, J. (2015). 'Out on the street it's like a brotherhood of sorts': The commonality of violent offending within Scottish and Australian street-orientated youth subcultures. *International Journal of Child and Adolescent Health*, 8, 201-209. Retrieved from <https://novapublishers.com/shop/international-journal-of-child-and-adolescent-health/>
- Tetnowski, J. (2015). Qualitative case study research design. *Perspectives on Fluency and Fluency Disorders*, 25, 39-45. doi:10.1044/ffd25.1.39
- Thanki, S., Govindan, K., & Thakkar, J. (2016). An investigation on lean-green implementation practices in Indian SMEs using analytical hierarchy process (AHP) approach. *Journal of Cleaner Production*, 135, 284-298. doi:10.1016/j.jclepro.2016.06.105
- Thomas, D. R. (2017). Feedback from research participants: Are member checks useful in qualitative research?. *Qualitative Research in Psychology*, 14, 23-41. doi:10.1080/14780887.2016.1219435
- Thürer, M., Stevenson, M., Silva, C., & Qu, T. (2017). Drum-buffer-rope and workload control in high-variety flow and job shops with bottlenecks: An assessment by simulation. *International Journal of Production Economics*, 188, 116-127. doi:10.1016/j.ijpe.2017.03.025
- Tinkler, L., Smith, V., Yiannakou, Y., & Robinson, L. (2018). Professional identity and the clinical research nurse: A qualitative study exploring issues having an impact on participant recruitment in research. *Journal of Advanced Nursing*, 74, 318-328. doi:10.1111/jan.13409
- Tran, V. T., Porcher, R., Falissard, B., & Ravaud, P. (2016). Point of data saturation was assessed using resampling methods in a survey with open-ended questions. *Journal of Clinical Epidemiology*, 80(1), 88-96. doi:10.1016/j.jclinepi.2016.07.014
- Trezona, A., Dodson, S., & Osborne, R. H. (2017) Development of the organisational health literacy responsiveness (org-hlr) framework in collaboration with health and social service professionals. *BioMed Central Health Services Research*, 17, 513-525. doi:10.1186/s12913-017-2465-z
- Trojanowska, J., Kolinski, A., Varela, M. L. R., & Machado, J. (2017). The use of theory of constraints to improve production efficiency – industrial practice and research results. *DEStech Transactions on Engineering and Technology Research*. Advance online publication. doi:10.12783/dtetr/icpr2017/17667
- Uhrin, Á., Bruque-Cámara, S., & Moyano-Fuentes, J. (2017). Lean production, workforce development and operational performance. *Management Decision*, 55, 103-118. doi:10.1108/MD-05-2016-0281
- U.S. Government Accountability Office. (2018). *Rural hospital closures: Number and characteristics of affected hospitals and contributing factors* (Report No GAO-18-634). Retrieved from <https://www.gao.gov/assets/700/694125.pdf>
- Valentine, K. D., Kopcha, T. J., & Vagle, M. D. (2018). Phenomenological methodologies in the field of educational communications and technology. *TechTrends*, 62, 462-472. doi:10.1007/s11528-018-0317-2
- Valizadeh, S., Borimnejad, L., Rahmani, A., Gholizadeh, L., & Shahbazi, S. (2016). Challenges of the preceptors working with new nurses: A phenomenological research study. *Nurse Education Today*, 44, 92-97. doi:10.1016/j.nedt.2016.05.021
- van Delden, J. J., & van der Graaf, R. (2017). Revised CIOMS international ethical guidelines for health-related research involving humans. *The Journal of the American Medical Association*, 317, 135-136. doi:10.1001/JAMA.2016.18977
- Van Maanen, J., & de Rond, M. (2017). The making of a classic ethnography: Notes on Alice Goffman's on the run. *Academy of Management Review*, 42, 396-406. doi:10.5465/amr.2016.0373
- Wallace, M., & Sheldon, N. (2015). Business research ethics: Participant observer perspectives. *Journal of Business Ethics*, 128, 267-277. doi:10.1007/s10551-014-2102-2
- Walshe, C., Algorta, G. P., Dodd, S., Hill, M., Ockenden, N., . . . Preston, N. (2016). Protocol for the end-of-life social action study (ELSA): A randomized 122 wait-list controlled trial and embedded qualitative case study evaluation assessing the causal impact of social action befriending services on end of life experience. *BMC Palliative Care*, 15(1), 60-75. doi:10.1186/s12904-016-0170-z

- Wang, C. C., & Geale, S. K. (2015). The power of story: Narrative inquiry as a methodology in nursing research. *International Journal of Nursing Sciences*, 2, 195-198. doi:10.1016/j.ijnss.2015.04.014
- Wang, T., Wang, Y., & McLeod, A. (2018). Do health information technology investments impact hospital financial performance and productivity?. *International Journal of Accounting Information Systems*, 28(1), 1-13. doi:10.1016/j.accinf.2017.12.002
- Warner, L. S., Galarraga, J. E., Litvak, O., Davis, S., Granovsky, M., & Pines, J. (2018). The impact of hospital and patient factors of the emergency department decision to admit. *Administration of Emergency Medicine*, 54, 249-257. doi:10.1016/j.jemermed.2017.11.024
- Westra, D., Angeli, F., Jatautaite, E., Carree, M., & Ruwaard, D. (2016). Understanding specialist sharing: A mixed method exploration in an increasingly price-competitive hospital market. *Social Science and Medicine*, 162, 133-142. doi:10.1016/j.socscimed.2016.06.019
- Wilden, R., Devinney, T. M., & Dowling, G. R. (2016). The architecture of dynamic capability research identifying the building blocks of a configurational approach. *The Academy of Management Annals*, 10, 997-1076. doi:10.1080/19416520.2016.1161966
- Wilden, R., & Gudergan, S. P. (2015). The impact of dynamic capabilities on operational marketing and technological capabilities: Investigating the role of environmental turbulence. *Journal of the Academy of Marketing Science*, 43, 181-199. doi:10.1007/s11747-014-0380-y
- Williamsson, A., Dellve, L., & Karlton, A. (2019). Nurses' use of visual management in hospitals-a longitudinal, quantitative study on its implications on systems performance and working conditions. *Journal of Advanced Nursing*, 75, 760-771. doi:10.1111/jan.13855
- Wolfe, S. M., Woolhandler, S., & Himmelstein, D. U. (2018). It is time to liberate hospitals from profit-centered care. *Journal of General Internal Medicine*, 33, 980-982. doi:10.1007/s11606-018-4448-0
- Wolgemuth, J. R., Erdil-Moody, Z., Opsal, T., Cross, J. E., Kaanta, T., . . . Colomer, S. (2015). Participants' experiences of the qualitative interview: Considering the importance of research paradigms. *Qualitative Research*, 15, 351-372. doi:10.1177/1468794114524222
- Woods, M., Paulus, T., Atkins, D. P., & Macklin, R. (2016). Advancing qualitative research using qualitative data analysis software (QDAS)? Reviewing potential versus practice in published studies using ATLAS.ti and NVivo, 1994–2013. *Social Science Computer Review*, 34, 597-617. doi:10.1177/0894439315596311
- Yadav, G., Seth, D., & Desi, T. N. (2017). Analysis of research trends and constructs in context to lean six sigma frameworks. *Journal of Manufacturing Technology and Management*, 28, 794-821. doi:10.1108/jmtm-03-2017-0043
- Yang, Y., Pankow, J., Swan, H., Willett, J., Mitchell, S. G., Rudes, D. S., & Knight, K. (2018). Preparing for analysis: A practical guide for a critical step for procedural rigor in large-scale multisite qualitative research studies. *Quality & Quantity*, 52, 815-828. doi:10.1007/s11135-017-0490-y
- Yap, Q. S., & Webber, J. K. (2015). Developing corporate culture in a training department: A qualitative case study of internal and outsourced staff. *Review of Business and Finance Studies*, 6(1), 43-56. Retrieved from <http://www.theibfr.com>
- Yapa, S. (2012). Total quality management in Sri Lankan service organizations. *The Total Quality Management Journal*, 24, 505-517. doi:10.1108/17542731211270070
- Yazan, B. (2015). Three approaches to case study methods in education: Yin, Merriam, and Stake. *The Qualitative Report*, 20, 134-152. Retrieved from [https://nsuworks.nova.edu/tqr\\_home/](https://nsuworks.nova.edu/tqr_home/)
- Yearby, R. (2015). Sick and tired of being sick and tired: Putting an end to separate and unequal health care in the United States 50 years after the Civil Rights Act of 1964. *Health Matrix*, 25, 1-32. Retrieved from <https://scholarlycommons.law.case.edu/healthmatrix/>
- Yin, R. K. (2018). *Case study research: Design and methods* (6th ed.). Thousand Oaks, CA: Sage.
- Yoon, A. (2017). Data reusers' trust development. *Journal of the Association for Information Science and Technology*, 68, 946-956. doi:10.1002/asi.23730
- Zamawe, F. C. (2015). The implication of using NVivo software in qualitative data analysis: Evidence-based reflections. *Malawi Medical Journal*, 27(1), 13-15. doi:10.4314/mmj.v27i1.4
- Zhu, Y. C., Yang, H. X., Wei, Y. M., Zhu, W. W., Meng, W. Y., Wang, Y. Q., . . . Sun, Y. (2017). Analysis of correlation factors and pregnancy outcomes of hypertensive disorders of pregnancy—a secondary analysis of a random sampling in Beijing, China. *The Journal of Maternal-Fetal & Neonatal Medicine*, 30, 751-754. doi:10.1080/14767058.2016.1186161