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Modern Costing Strategies for Improved Profitability in Small- and Medium-Sized Businesses

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Walden University

College of Management and Technology

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Jennifer Kelly DeMoras

has been found to be complete and satisfactory in all respects,
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Walden University
2020

Abstract

Modern Costing Strategies for Improved Profitability in Small- and Medium-Sized
Businesses

by

Jennifer Kelly DeMoras

MBA, Plymouth State University, 2013

BS, Plymouth State College, 2000

Doctoral Study Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Business Administration

Walden University

February 2020

Abstract

Small- and medium-sized enterprise (SME) accounting managers use little to no modern costing strategies which can negatively impact profitability. Advances in technology, innovations in product design, and increases in globalization mean SMEs could benefit from modernizing their internal costing systems. This study is important to SME accounting managers because of offering new information and practical methods that SMEs might use for improved profitability. Grounded in the contingency theory of management accounting, the purpose of this qualitative multiple case study was to explore the modern costing strategies SME accounting managers used to improve profitability. Seven SME owners, CFOs, and administrators who manage the accounting function for their organization participated in this study. Data collection included semistructured interviews, direct observations, and documentation review. As a result of thematic analysis, 3 themes morphed as the prioritization of cost management using target and life-cycle costing, a focus on continuous improvement via lean strategies, and quality costing and activity-based costing use in response to external environmental contingencies. The implications for positive social change include increased sponsorships for local events with the potential increase of donations to local schools and outreach organizations supporting local community residents.

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Dedication

This achievement would not have been possible if it were not for Professor Jack Verani who offered me my first position in higher education and ignited a passion I did not know I had for teaching; Dr. Yvette Lazdowski and Dr. Vedran Lelas who opened doors allowing me to advance my dream of teaching; and Dr. Christina Bradbury, Dr. Thomas Guarino, and Professor Roger Babin who believed in me and gave me the chance to pursue my passion for teaching on a full-time basis.

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Section 1: Foundation of the Study

Small business accounting managers support the profitability and success of their firms, which contributes to the stability and economic growth of local communities (Johnson, Faught, & Long, 2017). Over 99% of all businesses within the United States are small businesses (U.S. Census Bureau, 2016). However, half of all small businesses in the United States fail within 5 years, and only one third of small businesses succeed beyond 10 years (U.S. Bureau of Labor Statistics, 2016). The state of New Hampshire ranks the third lowest in entrepreneurial activity in the United States according to the Kaufmann Early-Stage Entrepreneurship Index (Fairlie, Desai, & Herrmann, 2019). In start-up early survival rate alone, New Hampshire ranks the 10th lowest in the nation, less than 4% ahead of lowest-ranked Georgia and nearly 11% behind highest-ranked (and neighboring state) Maine (Fairlie et al., 2019). A contributing factor in SME failure is SME accounting managers' lack of management accounting practices (MAPs), such as modern costing strategies, to improve profitability (Armitage, Webb, & Glynn, 2016; Cuzdriorean, 2017). Improved profitability could increase the start-up early survival rate (Winget, Lamb, & Wheatley, 2017). The focus of this study was on discovering what modern costing strategies SME accounting managers use to improve profitability.

Background of the Problem

The main objectives of management accounting (MA) are costing, the profitability of products, the forecasting of revenue and expenditures through budgeting, and the substantiation of management decisions (Natalita-Mihaela & Adreea-Mihaela, 2015). MAPs, such as modern costing strategies, support firm profitability and success

by aiding decision-making (Cuzdriorean, 2017). Armitage et al. (2016) and Cuzdriorean (2017) found limited use of traditional and modern costing systems by SME accounting managers. Advanced MAPs necessitate additional resources and skillsets that may elude SME accounting managers (San, Heng, Selley, & Magsi, 2018). Factors such as the perceived cost-benefit trade-off, limited number of products and services, variations in product design, and lack of sophisticated accounting information systems (AISs) limit SME accounting managers' use of modern costing systems (Armitage et al., 2016; Cuzdriorean, 2017). Discovering what modern costing strategies SME accounting managers use could improve profitability.

Problem Statement

In 2015, there were 30.2 million small businesses in the United States that created 1.9 million net new jobs (U.S. Census Bureau, 2016). Over two thirds of small businesses use little to no modern costing strategies, which can result in inaccurate product and service costs and decreased profitability (Armitage et al., 2016; Cuzdriorean, 2017). The general business problem was that the use of traditional costing strategies by accounting managers is no longer optimal affecting profitability. The specific business problem was that some SME accounting managers lack modern costing strategies to improve profitability.

Purpose Statement

The purpose of this qualitative multiple case study was to explore the modern costing strategies SME accounting managers use to improve profitability. The population was seven SME owners, chief financial officers (CFOs), and administrators who manage

the accounting function for their organization in New Hampshire and who successfully implemented modern costing strategies to improve profitability. The implications for social change include the ability of SME accounting managers to use increased profits to improve the quality of life for residents of the local community. With increased profits, SME accounting managers could increase sponsorships of special events or increase donations to schools and outreach organizations supporting local community residents, which could positively contribute to social change.

Nature of the Study

I used the qualitative research method. Qualitative research is interactive and naturalistic (Saunders, Lewis, & Thornhill, 2016). Researchers use qualitative research to understand the meanings of participants' imparted thoughts related to the phenomenon under study (Yin, 2018). Quantitative researchers measure variables and test hypotheses to examine relationships or group differences (Park & Park, 2016). Mixed-methods researchers use a combination of quantitative and qualitative methods in the same study (Saunders et al., 2016). As testing of hypotheses did not occur, neither the quantitative method nor mixed-methods were appropriate for this study.

A qualitative case study was the choice of design for this study. Researchers use a qualitative case study design to understand the nature of a topic in its natural setting through the interactions of the case's subject and its context within a predefined set of boundaries (Saunders et al., 2016). Examining a case's real-life context provides a holistic perspective of management's processes (Yin, 2018). Other qualitative designs such as phenomenology and ethnography were not optimal, as the focus of

phenomenology is on participants' lived experiences, while ethnography concerns social culture (Saunders et al., 2016), neither of which were the focus of this study. A case study was the optimal choice as it permitted me to obtain a contextual understanding of the phenomenon bounded by time and place and to compare data across cases allowing for a better understanding of variations (see Yin, 2018).

Research Question

What modern costing strategies do SME accounting managers use to improve profitability?

Interview Questions

1. What modern costing strategies do you use to improve business profitability?
2. What contingencies influenced your company to choose those specific modern costing strategies to improve profitability?
3. How did choosing those specific modern costing strategies help match your company's organizational structure to its environmental contingencies to improve profitability?
4. How did you implement your modern costing strategies to improve profitability?
5. What were the key barriers to implementing your modern costing strategies to improve profitability?
6. How did your organization address the key barriers to implementing its modern costing strategies to improve profitability?
7. How have you measured the effectiveness of your modern costing strategies to improve profitability?

8. What other information can you provide about the modern costing strategies your organization uses to improve profitability?

Conceptual Framework

The contingency theory (CT) as applicable to MA was the conceptual framework for this study. Researchers' use of the CT in MA contexts evolved from the CT of organizational structure, the framework of which concerns the matching of appropriate forms of organizational structure with specific circumstances or contingencies (Otley, 2016). Otley (1980) popularized the use of the CT in MA contexts. Otley's (1980) premise that no one universally appropriate accounting system exists and that organizations' accounting systems depend upon management's response to environmental contingencies forms the basis of the CT as applicable to MA. The underlying tenets of Otley's (1980) CT as applicable to MA are that the structure of an organization is dependent on a firm's environmental contingencies and that managers need to identify a proper matching between aspects of an organization's accounting system and the environmental contingencies. As related to this study, the CT as applicable to MA explained how some SME accounting managers use specific modern costing strategies to match their organizational structure with their environmental contingencies to improve profitability.

Operational Definitions

Activity-based costing (ABC): A costing method focused on activities and the consumption of resources to derive product and service costs (Alzoubi, 2018).

Kaizen costing: A costing system focused on the reduction of costs through the elimination of all waste and ongoing monitoring and continuous improvement in the product development process (Alzoubi, 2018).

Lean costing: A costing system focused on the analysis of costs at a value stream level versus an individual product level (Pickering, 2018).

Life-cycle costing: A costing system that takes a broader approach incorporating costs borne in all five stages of manufacturing: product concept, product design, product improvement, production, and logistic support (Contuk, 2018).

Management accounting practices (MAPs): A group of accounting practices used to derive costing information, determine the profitability of manufactured products, forecast revenue and expenditures through budgeting, and assist in the substantiation of management decisions (Natalita-Mihaela & Adreea-Mihaela, 2015).

Management accounting system (MAS): An internal system used to provide information to management on product and service costs, enable budgeting, enhance performance management, and support short-term and long-term decision-making (Abba, Yahaya, & Suleiman, 2018).

Modern costing strategies: Costing strategies in existence since the 1980s that better reflect product and service costs including target costing, just-in-time costing, ABC, kaizen costing, lean costing, quality costing, and life-cycle costing (Junqueira, Dutra, Filho, & Gonzaga, 2016; Ngoc & Takacs, 2018).

Quality costing: Costs associated with the prevention, detection, and correction of issues related to product or service quality (Garrison, Noreen, & Brewer, 2016).

Small- and medium-sized enterprises (SMEs): Businesses with fewer than 500 employees (U.S. Census Bureau, 2016).

Target costing (TC): A costing method used primarily during the product design stage to reduce production costs so that the product will be competitive in the market (Alzoubi, 2018).

Assumptions, Limitations, and Delimitations

Assumptions

Assumptions occur when researchers consider facts to be true as verification is not possible (Diefenbach, 2009). The first assumption in this study was that the modern costing strategies SME accounting managers use directly affect the accuracy of their product and service costs, thereby impacting their profitability (see Wouters & Stecher, 2017). The second assumption was that the SME accounting managers participating in the study would give honest and open feedback and that the information they provided would be accurate. The last assumption was that a better understanding of modern costing strategies would be valuable and desirable information for SME accounting managers to improve profitability (see Wouters & Stecher, 2017).

Limitations

Limitations are weaknesses in a study beyond the control of the researcher (Marshall & Rossman, 2016). One limitation of this study was the transferability of the study's findings to other SME accounting managers. A second limitation of this study was the potential for participants to misrepresent the truth. When participants intentionally or unintentionally misrepresent the truth, it can lead to incorrect

interpretations and conclusions that can negatively impact the researcher's findings (Li, Wu, & Chen, 2016). A third limitation was that this study was bounded by place and time. Conducting the same study at another place and time could alter the results (Kihn & Ihantola, 2015).

Delimitations

Delimitations are the bounds within which the researcher conducts and defines the scope of the study; they are within the researcher's control (Alpi & Evans, 2019; Rule & John, 2015). The delimitations of this study included my choice of participants, geographic location, and type of costing strategies analyzed. The study's design supported the scope to achieve the research objective of understanding the modern costing strategies SME accounting managers use to improve profitability. The intended participants for this multiple case study were five to seven SME accounting managers at firms in operation for at least 5 years in New Hampshire who had at least 3 years of experience in an MA role and who had experience using modern costing strategies to improve profitability. The choice of modern, and not traditional, costing strategies bounded the study to only those SME accounting managers who used modern costing strategies.

Significance of the Study

Contribution to Business Practice

The findings of this study may contribute to business practice by conveying to SME accounting managers new information about modern costing strategies. The use of modern costing strategies can enable better decisions about pricing and order acceptance

(Shea, Waldrup, Xu, & Williamson, 2018; Wouters & Stecher, 2017). In addition, the use of modern costing strategies could help SME accounting managers establish minimum order thresholds and identify products or services for discontinuance, potentially improving profitability (Shea et al., 2018; Wouters & Stecher, 2017). The findings of this study may contribute to the effective practice of business by imparting SME accounting managers a means of designing and implementing a product or service costing tool to simplify and automate the costing process, potentially improving the accuracy of cost calculations which could improve profitability.

Implications for Social Change

The implications for positive social change include increased profitability enabling SME accounting managers to contribute to their communities through sponsorships of special events or donations to schools and outreach organizations supporting local community residents. Contributions such as sponsorships and donations help promote economic justice, social cohesion, and environmental sustainability (McCaffrey & Kurland, 2015). Acquiring new information about the modern costing strategies used by SME accounting managers might lead to increased profitability and an improved ability to support local community residents, which could positively contribute to social change.

A Review of the Professional and Academic Literature

The purpose of this qualitative multiple case study was to explore the modern costing strategies SME accounting managers use to improve profitability. Wouters and Stecher (2017) found that pricing and order acceptance decisions, along with decisions

about minimum order requirements and product or service discontinuance, could be improved using modern costing strategies. An exhaustive review of what modern costing strategies SME accounting managers use could help SME accounting managers with pricing and order-related decisions to improve profitability. To fully understand the contingencies that impact the adoption of modern costing strategies by SME accounting managers, I performed a comprehensive critical analysis and synthesis of the literature surrounding the topic.

The evolution of MA research since 1965 includes the use of MAPs by SME accounting managers in support of firms' long-term strategies and value creation (Legaspi, 2018). Contingent factors within a firm's environment have an impact on the type of MAPs firms' use, and accordingly, CT is prevalent in studies of the use of MAPs in SMEs (Al-Sayed & Dugdale, 2016; Shahzadi, Khan, & Toor, 2018). Otley's (1980) CT within MA contexts is prevalent in the research. The CT as applicable to MA suggests that firms will match the structure of their MA systems to their specific circumstances or contingencies to improve performance (Otley, 2016; San et al., 2018).

Modern costing strategies fall within the MAPs of SMEs (Uyar, 2019). Since the 1980s, the emergence of more modern costing systems to better support firm profitability and competitiveness is evident (Junqueira et al., 2016). The use of modern costing strategies can improve SME profitability (Nasution & Siregar, 2018; Pickering, 2018). When SMEs are profitable, their accounting managers have an improved ability to contribute resources to the community, which can support growth and long-term economic sustainability (Park & Campbell, 2017). The literature review addressed the

following key areas: (a) the history of MA research and current trends in the literature, (b) MA research theories with a specific focus on the CT as applicable to MA, (c) factors impacting the adoption of MAPs in SMEs, (d) MAPs used in SMEs, (e) modern costing systems as a means of improved profitability in SMEs, and (f) the impact of SME's profits on relationships with local communities.

Strategy for Literature Review

The literature acquired for this review came from academic libraries, peer-reviewed industry journals, government websites and databases, relevant textbooks, and other scholarly sources. I focused the search of the literature on full-text, peer-reviewed articles published within 5 years of the anticipated completion date of this study. This review of the literature contains 112 sources with 85% of those sources published within 5 years of the anticipated completion date of this study. Ninety-eight percent of the sources used in this literature review came from peer-reviewed journals. Key databases made available through Walden University's subscriptions and used in this literature review included ABI/INFORM, Business Source Complete, Emerald Insight, SAGE Journals, and ScienceDirect. Keywords used included *activity-based costing*, *ABC costing*, *agency theory*, *attribute costing*, *contingency theory*, *cost accounting strategies*, *cost classifications*, *costing systems*, *just-in-time (JIT) costing*, *kaizen costing*, *life-cycle costing*, *management accounting practices*, *management control systems*, *managerial accounting*, *modern costing systems*, *product costing systems*, *quality costing*, *resource-based view (RBV) theory*, *small business*, *small- and medium-sized enterprises*, *small*

business failure, strategic costing, strategic cost management, target costing, traditional costing systems, and additional combinations of phrases using these keywords.

Application to the Applied Business Problem

The purpose of this qualitative multiple case study was to explore the modern costing strategies SME accounting managers use to improve profitability. Wouters and Stecher (2017) found that modern costing strategies improve SME accounting managers' decisions about pricing and order acceptance, helping SME accounting managers to establish minimum order thresholds and identify products or services for discontinuance. Using the information gained from this research could lead to an increased ability of SME accounting managers to calculate product and service costs more accurately, resulting in improved business profitability.

SME accounting managers do not use many of the modern MAPs available, including responsibility accounting, transfer pricing, the Balanced Scorecard (BSC), and activity-based approaches to costing (Legaspi, 2018; Siska, 2016). Barriers such as the high cost of implementation, lack of management commitment, financial constraints, and limited educational background or training impacted SMEs' use of modern MAPS (Cuzdriorean, 2017). A lack of sophisticated MASs or too few products or services limited the use of modern costing strategies by SME accounting managers (Armitage et al., 2016). Studying what modern costing strategies SME accounting managers use to improve profitability could offer insight for other SME accounting managers considering the implementation of these strategies. This insight may help other SME accounting

managers move past the barriers associated with implementation and achieve more accurate cost calculations.

Brief History of Management Accounting Research

The four key principles of relevance, influence, value, and trust underlie MA research (Abednazari, Roodposhti, Nikoomaram, & Pourzamani, 2018). The principles have evolved since 1965, their use helping firms support long-term strategies and value creation (Legaspi, 2018). Abednazari et al. (2018) proposed the four paradigms of the (a) Industrial Revolution, (b) direct costing, (c) ABC, and (d) paradigm-based standards to explain the history of MA research. Ngoc and Takacs (2018) also discussed four stages of historical MA research but referred to them as (a) pre-1950, cost determination and financial control; (b) 1950-1964, management planning and control; (c) 1965-1984, waste elimination of resources; and (d) 1985-current, value creation through the effective use of resources. The use of modern costing strategies creates value through the effective use of resources by forcing firms to reassess their approach to product and service costing by including activities as drivers of cost (Nasution & Siregar, 2018).

Current Trends in Management Accounting Research

A review of existing studies showed that three categories of research exist within studies of MA: (a) theoretical perspectives, (b) research methods, and (c) practices as supported by the *Handbook of Management Accounting Research* (Sitki, 2016).

Bromwich and Scapens's (2016) research showed that social and critical theories are increasingly used in the study of MA, while economic theories have declined in use. A review of MA research showed a narrowing of topics to those focused on control issues,

multiple forms of validity, and increased use of case studies (Lachmann, Trapp, & Trapp, 2017).

Bromwich and Scapens (2016) identified many theories related to MAPs but observed that the existence of those theories did not have a significant impact on MAPs. This observation led them to conclude that there is a need to close the gap between theory and practice (Bromwich & Scapens, 2016). Rautiainen, Sippola, and Matto (2017) furthered this argument by proposing a constructive research approach as a method to increase the relevance of MA research. The constructivist research approach is a type of interventionist research strategy put forth in a new tool called the *Relevance Diamond* to assess the relevance of research from the multiple perspectives of practical value relevance, decision relevance legitimacy, academic value relevance, and instrumental decision relevance (Rautiainen et al., 2017).

Qualitative Method in Management Accounting Research

The increase in qualitative studies of MA has coincided with concerns surrounding validation and evaluation among business researchers (Kihn & Ihantola, 2015). Kihn and Ihantola (2015) found three approaches to evaluation in qualitative studies of MA: the adoption of classic concepts of validity and reliability, the use of alternative concepts, and the abandonment of general evaluation criteria. Parker and Northcott (2016) communicated the key attributes that affect the generalizability of qualitative accounting research putting forth five forms of qualitative generalization including (a) analytical (b) theoretical (c) analogical, (d) communicative, and (e) naturalistic to justify the application of qualitative research findings and conclusions.

This qualitative study adhered to the four quality dimensions of reliability, credibility, transferability, and confirmability (Abdalla, Oliveira, Azevedo, & Gonzalez, 2018).

Supporting the evolution of qualitative research in MA studies, Hall (2016) suggested greater use of field studies instead of surveys, promulgating an alignment of MAPs with other information, while capturing management emotions in the analysis of decisions. Hall (2016) stressed the need for psychological theory in contingency-based MA (CBMA) research and the development of stronger linkages between individual and organizational studies. Abba et al. (2018) suggested the performance of studies that enable a more intimate relationship between the researcher and the firm, and case studies with a small number of firms that isolate some contingencies while holding other contingencies constant. This study was a multiple case study of seven participants which enabled an intimate relationship between the organizations under study and me as the researcher.

Contingency Theory as Applicable to Management Accounting

Contingencies are factors that influence the impact of firm attributes on performance, while the contingency theoretical framework focuses on the impact of contextual factors on firm performance (Junqueira et al., 2016). The contingency theoretical framework has a presence in three philosophies of science: (a) operations management positivism, (b) MA positivism, and (c) MA hermeneutics (Curry, 2018). Grounded within the contingency theoretical framework is the study of the organization and how to best define it (Sayilar, 2016). Researchers using the contingency theoretical framework analyze the relationship between a firm's structure and its environment

attempting to understand how a firm's structure reacts with the contingencies it meets, thereby determining the firm's level of performance (Junqueira et al., 2016; San et al., 2018).

The use of the CT as applicable to MA evolved from the CT of organizational structure, the framework of which concerns the matching of appropriate forms of organizational structure, such as MA systems, with specific circumstances or contingencies (Otley, 2016; San et al., 2018). The CT as applicable to MA is the predominant theoretical framework used in the study of firms' adoption of MAPs (Al-Sayed & Dugdale, 2016; Shahzadi et al., 2018). The CT as applicable to MA has unrivaled backing in the field of accounting research (Abba et al., 2018; Curry, 2018), as contingent factors underlie the majority of research in MA (Otley, 2016). The CT as applicable to MA was the conceptual framework chosen for this study.

The CT as applicable to MA is a widely used framework for studies of MA over the past 20 years (Ngoc & Takacs, 2018). The extent to which SME accounting managers adopt MAPs depends on the internal and external factors affecting the firm (Samuelsson, Andersen, Ljungkvist, & Jansson, 2016; Shields & Shelleman, 2016). The organization's attributes and its circumstances or contingencies, both internal and external, affect the evolution of the firm's MAPs (Uyar & Kuzey, 2016), making the CT as applicable to MA the optimal theory to study SME accounting managers' use of modern costing strategies to improve profitability.

History of contingency theory as applicable to management accounting. The CT as applicable to MA originated from the evolution of management science studies in

the 1950s (Otley, 2016). Researchers used this theory to explain the multitude of MAPs present within organizations (Otley, 2016; Sayilar, 2016). The use of the contingency theoretical framework in organizational structure contexts is evident with the work of researchers such as Burns and Stalker in 1961, Thompson in 1967, and Lawrence and Lorsch in 1967, all of whom studied the effect of environment and technology on organizational structure (Ismail, Zainuddin, & Sapiei, 2010). Lawrence and Lorsch (1967) found that firms should fit their internal structures to the external contextual factors perceived in the environment. Hofstede's fieldwork in 1967 was one of the first uses of the CT as applicable to MA (Abba et al., 2018). Limited application of the CT as applicable to MA, occurred before the mid-1970s (Otley, 2016).

The CT as applicable to MA arose in the literature in the 1970s as evidenced by the empirical work of Bruns and Waterhouse (1975), who studied control strategies in various types of organizations. Hayes (1977) stressed the importance of taking a contingency approach to MA putting forth a model of organizational performance, and Dermer (1977) said that the planning and control system's design is specific to situations. Proponents of the CT as applicable to MA postulate that there is no uniform accounting system ideal for all firms in all contexts (Otley, 1980).

Otley's (1980) CT as applicable to MA is prominent in the literature and is focused on contingent variables. The critical assumptions of Otley's theory are that the structure of an organization is dependent on the firm's environment and its use of technology, while the usefulness of a firm's MA system depends on the firm's structure (Tiessen & Waterhouse, 1983). The underlying tenets of Otley's (1980) CT as applicable

to MA focused on the need to identify certain aspects of an accounting system that relate with specific circumstances or contingencies to illustrate a proper matching between the system's attributes and the circumstances. The organizational performance will improve if there is a match or goodness of fit between the MA systems and the contextual factors facing organizational leaders (Otley, 1980; Pavlatos, 2018). The CT as applicable to MA explained how some SME accounting managers used specific modern costing strategies to match their organizational structure with their environmental contingencies to improve profitability.

Contingency theory as applicable to management accounting in general studies of management accounting. CBMA is an approach to research in the field of MA, while the CT as applicable to MA is a defined theory found in many studies of MAPs (Hall, 2016). Otley (1980) stated that there are different thoughts on how best to apply the CT as applicable to MA, as is evidenced by the fact that underlying tenets of the theory vary dramatically across studies. Contingency factors present in general studies of MA include the organizational determinants of organizational size (Shao, Feng, & Hu, 2016; Siska, 2016) and strategy (Lucianetti, Jabbour, Gunasekaran, & Latan, 2018; McAdam, Miller, & McSorley, 2019), as well as technology (Azudin & Mansor, 2018; Uyar & Kuzey, 2016), structure (Uyar & Kuzey, 2016; Yigitbasioğlu, 2017), leadership (Wadongo & Abdel-Kader, 2014; Yigitbasioğlu, 2017), and culture (Lucianetti et al., 2018; McAdam et al., 2019).

Environmental determinants of competitiveness (Ngoc & Takacs, 2018; Wadongo & Abdel-Kader, 2014), dynamism, and predictability (Wadongo & Abdel-Kader, 2014),

taken collectively as the external environment (Lucianetti et al., 2018; Shahzadi et al., 2018), were all factors studied in general studies of MA. Contingent variables such as resources, operating activities, strategies, and firm size determined the fit of MA information (Legaspi, 2018). The contingent variables of strategy, culture, lifecycle, and customer focus, when interrelated with quality management practices, positively impacted the alignment of SMEs to their environment (McAdam et al., 2019).

Uyar and Kuzey (2016) used the CT as applicable to MA to study factors such as firm size, structure, perceived environmental uncertainty (PEU), and information technology (IT) finding that they impacted the extent of budget use and that extent of budget use along with firm structure, PEU, and level of IT affected firm performance. San et al. (2018) also studied environmental uncertainty analyzing the relationship between environmental MA and performance and the contingent factors of environmental uncertainty, organizational size, environmental strategy, regulatory pressure, and top management commitment. San et al. found that uncertainty in the environment, regulatory pressure, and top management commitment played a role in environmental performance. In contrast to San et al., Yigitbasioğlu (2017) found that three factors drove management accounting adaptability: (a) the influence of top management knowledge, (b) team-based structures, and (c) information system flexibility within firms. External environmental contingencies and internal organizational contingencies impacted the choice of modern costing strategies by SME accounting managers to improve profitability.

Yigitbasioğlu (2017) used the CT as applicable to MA to analyze the circumstances affecting management accounting adaptability within firms using the agility lens. The agility lens is a theoretical lens focused on identifying factors that aid clarification and response in a dynamic environment, and it complements the more widely used CT as applicable to MA (Yigitbasioğlu, 2017). Azudin and Mansor (2018) assessed three factors of (a) organizational deoxyribonucleic acid (DNA), (b) business potential, and (c) operational technology to measure the impact of these factors on MAPs' use, finding that organizational DNA and business potential did not significantly impact MAPs' use, but that operational technology did.

Ngoc and Takacs (2018) also studied organizational DNA finding that competition, firm size, level of decentralization, management mindset toward learning, culture, and make-up of ownership impacted MAPs' use in developed countries. In addition to the factors impacting firms' use of MAPs in developed countries, the additional factors of the cost of implementation and the education and age of the workforce impacted the use of MAPs in developing countries (Ngoc & Takacs, 2018). Siska (2016) confirmed this similarity finding that contingent factors influenced the adoption of MAPs in both developed and emerging economies. Contingent factors influenced the adoption of modern costing strategies by SME accounting managers.

Diagnostic use, the dynamic tension between diagnostic and interactive use, firm size, and the firm's presence in the manufacturing industry impacted MAP use as a whole (Siska, 2016). The external environment forms the basis of CT as applicable to MA research as it is a formidable contextual variable (Pavlatos, 2018), underscoring the value

of taking a contingent rather than a universalistic approach to managing the interplay between internal and external factors to improve performance (Yuen & Thai, 2017). The key is to determine how effectiveness is achievable when matching these contingent variables to an organization's structure (Shao et al., 2016; Yuen & Thai, 2017). When SME accounting managers matched their structure, including their costing systems, to their contingent variables, improved effectiveness (such as improved profitability) was achievable.

Otley (2016) and Baird and Su (2017) stressed the importance of studying management control *packages* rather than studying arbitrary variables independent of one another, while Godil and Shabib-ul-Hasan (2018) stated that studies of contingencies should be done holistically, grouping various contingent variables, rather than studying them separately. Otley (2016) underscored the importance of organizational context suggesting a move away from standardized questionnaires that narrow the contingent view, to data collection techniques that capture the organizational context of the MCS. Supporting the need to capture organizational context, Hall (2016) suggested greater use of field studies instead of surveys, aligning MAPs with other information, as well as capturing management emotions in the analysis of decisions. Hall (2016) stressed the need for a psychology theory in contingency theoretical framework research and the development of stronger linkages between individual and organizational studies. This multiple case study allowed me to capture the organizational context influencing SME accounting managers' choice of modern costing strategies.

Contingency theory as applicable to management accounting in studies of modern management accounting practices. The CT as applicable to MA underlies a majority of the studies on modern MA practices (Quesado, Aibar-Guzman, & Rodrigues, 2016; San et al., 2018). By the mid-1980s, existing MA systems were outdated and not supportive of the competitive manufacturing environment (Legaspi, 2018). This finding marked a turning point where many new MAPs such as ABC, the BSC, and benchmarking began to see adoption by firms to compete more effectively globally (Ngoc & Takacs, 2018). The work grounded in the CT as applicable to MA illustrates how manufacturing firms have been required to implement state of the art manufacturing and management practices to effectively compete on the world stage thereby increasing their performance (Dubey et al., 2017).

In response to increased global competition, alignment between differentiation strategies, informal MCSs, and modern management practices occurred, and superior performance was seen in SMEs using both modern management practices and a differentiation strategy (Junqueira et al., 2016). Modern MAPs can include (a) target costing, (b) JIT, (c) ABC, (d) kaizen costing, (e) lean costing, (f) quality costing, and (g) life-cycle costing, along with total quality management (TQM) and the BSC (Junqueira et al., 2016; Ngoc & Takacs, 2018). I used the modern MAPs identified by Junqueira et al. (2016), and Ngoc and Takacs (2018), as the basis for the modern costing strategies studied.

Contingency factors serve as precursors for the implementation of advanced manufacturing technologies (AMT) and management practices and impact the presence

of measurement systems, thereby influencing performance outcomes (Lucianetti et al., 2018). Underscoring the importance of AMTs, Godil and Shabib-ul-Hasan (2018) found that strategy, top management support, and AMTs impacted MA frameworks and that strategy, market orientation, and MA had a significant positive impact on company performance. The contingency factors of decentralization and environmental uncertainty impacted AMT and management practice use, the performance measures used, and the ultimate firm performance, but in contrast to other studies of organizational strategy, did not significantly influence the adoption of AMT and management practices (Lucianetti et al., 2018).

Chenhall and Langfield-Smith (1998) used the CT as applicable to MA as a framework in finding that ABC provided the least benefit for firms but was effective when used in conjunction with traditional accounting practices. Using a demand-side approach to shed light on the impact of contextual factors in the adoption of modern costing systems, Laureano, Machado, and Laureano (2016) created a four-stage classification model called *Management Accounting Maturity Stage* using methods of allocation of indirect costs, and knowledge of ABC and BSC to classify firms into four stages. The four stages of the *Management Accounting Maturity Stage* model were: (a) no methods for allocating indirect costs, no knowledge of ABC or BSC; (b) single allocation base for indirect costs, little to no knowledge of ABC or BSC; (c) single allocation base for indirect costs, knowledge of ABC, but not BSC; and (d) multiple allocation bases for indirect costs, knowledge of both ABC and BSC (Laureano et al.,

2016). SME accounting managers' level of maturity in using modern costing strategies received analysis in this study.

Additional studies using the CT as applicable to MA focused on the relationship between AIS user satisfaction and ABC use (Diavastis, Anagnostopoulou, Drogalas, & Karagiorgos, 2016). An AIS is a system that is designed to collect, store, and process data so that decision-makers can retrieve information to support analysis (Romney & Steinbart, 2018). AIS components include people, procedures, data, software, technology, infrastructure, and security protocols (Romney & Steinbart, 2018). Diavastis et al. (2016) found that enhanced financial performance was possible when AIS user satisfaction and ABC use interacted and that no impact on financial performance existed when AIS user satisfaction and ABC use did not interact. Affes (2016) studied the success rate of ABC and economic value-added creation finding that applied technology, product costs, activities, and capital distortion impacted ABC on economic value-added creation, as did the financial and innovation culture, and the level of competition. Other research showed that SME accounting managers found ABC unnecessary as firms were successful without it, and some small business accounting managers found their businesses to be too simple for ABC (Legaspi, 2018). In this study, SME accounting managers using ABC within their AIS realized improved profitability as a result of adopting this modern costing strategy.

Using the CT as applicable to MA, Legaspi (2018) found that SMEs do not use many of the modern MAPs available, including responsibility accounting, transfer pricing, and the BSC. Siska (2016) confirmed Legaspi's (2018) results finding that

modern MAPs received minimal adoption, including practices such as activity-based approaches and the BSC. Results showed that target costing, JIT costing, ABC, kaizen costing, and lean costing also had little use in SMEs, yet some SMEs used target costing as a planning tool for meeting customer demands (Legaspi, 2018). Building on Legaspi's (2018) findings regarding target costing, Goncalves, Gaio, and Silva (2018) used the CT as applicable to MA to assess the relationship between innovation and environmental and organizational determinants and the impact of innovation on the adoption of target costing. Goncalves et al. (2018) found that factors historically tested such as competitiveness, environment, uncertainty, and innovation were inadequate and irrelevant and that economic group affiliation made an impact, as did a product cost control focus versus a product development cost focus in firms' decision to use target costing. In congruence with the CT as applicable to MA, firms sometimes adopted target costing without understanding its full value because of pressure from their economic group (Goncalves et al., 2018).

Other factors found to have a role in SME accounting managers' use of modern MAPs included risk aversion, as SME accounting managers avoided using JIT practices because having no inventories on hand caused concern about lost profit potential (Legaspi, 2018). Kaizen costing and lean costing were not used in SMEs because owners were unaware of the practices and accounting managers, though familiar with the strategies, did not feel they knew how to implement those tools (Legaspi, 2018). The CT was applicable to MA in studies of lean costing as evidenced through the work of Hallavo, Kuula, and Putkiranta (2018) who studied the effects of lean costing using a

longitudinal perspective. Results indicated that the makeup of firm ownership and the business cycle phase affected the use of lean costing, but that the use of lean costing was effective over time (Hallavo et al., 2018). Hallavo et al. (2018) noted the evolution of lean practices into a philosophy of management, while Legaspi (2018) discovered a slow movement of SMEs to other MAPs such as benchmarking and total quality management (TQM). The extent of modern costing strategy use depended upon the knowledge of the SME accounting managers and the SME ownership structure.

Quesado et al. (2016) used the CT as applicable to MA to study the factors that affected the adoption of the BSC performance measurement tool in firms using a series of extrinsic and intrinsic factors to determine which factors positively affected the adoption of a BSC. Quesado et al. (2016) used the independent variables of firm age, product mix, ownership structure, firm size, and internationalization to discover the degree of diversity of products, the ownership structure of the firm, and the firm's size all positively affected the dependent variable, the adoption of the BSC. To study how management techniques and MAPs affected overall firm performance, Chenhall and Langfield-Smith (1998) used the CT as applicable to MA to identify a series of MAPs including traditional MA techniques, activity-based techniques, balanced performance measures, employee-based measures, benchmarking, and strategic planning.

Traditional and modern MAPs provided high benefits to firms, but the use of traditional MAPs occurred more often than modern MAPs as developing countries had minimal use of modern MAPs except for a few medium and large manufacturing firms (Ngoc & Takacs, 2018). A lack of knowledge and perceived usefulness were some of the

key limitations to the use of modern costing strategies in small businesses, thereby decreasing the likelihood of the strategies' use (Cuzdriorean, 2017). SME accounting managers' knowledge and perceived usefulness of modern costing strategies influenced the adoption of these practices.

Contingency theory as applicable to management accounting in studies of management control systems. Cost management systems are the key tenet of the overarching MCS of a firm (Siska, 2016). MCS design should account for contingency factors by being adaptable and not universal (Otley, 1980), as no individual MCS is ideal in all situations because of the existence of contextual factors (Siska, 2018). External factors in firms' operating environment impact the design and use of firms' MCS (Maletic et al., 2017; Samagaio, Crespo, & Rodrigues, 2018), as does the PEU (Maletic et al., 2017; Pavlatos, 2018). Maletic et al. (2017) found that firms encountering high levels of competitiveness and uncertainty used physical asset management practices such as risk management, performance assessment, life-cycle management, and policy and strategy sessions to a greater extent. This research supports the CT as applicable to MA by underscoring the need for contextual-based physical asset management research (Maletic et al., 2017).

Firm size was also a widely-used factor in firms' adoption of MCSs (Chenhall, 2003; Siska, 2018). In addition to firm size and external environment, factors such as firms' profile or type (Samagaio et al., 2018; Zazycka, Dobroszek, Circa, & Almasan, 2017) influenced the choice of MCSs, as did firms' CEO characteristics (Zazycka et al., 2017), use of technologies (Chenhall, 2003), product diversity (Hasyim & Jabid, 2019),

firm age (Pavlatos, 2018) and internal environmental factors (Junqueira et al., 2016; Zazycka et al., 2017). Strategy played a significant role in firms' choice of MCS (Oro & Lavarda, 2019; Samagaio et al., 2018).

Oro and Lavarda (2019) found that the family-business relationship impacted business strategy measures of performance used. Family firms altered MCSs based on contingencies by implementing control systems that were customized and included both diagnostic controls and interactive controls as a means of aligning MCSs with performance attributes and strategy (Oro & Lavarda, 2019). Junqueira et al. (2016) found that strategic choice impacted MCS design and that alignment occurred between cost leadership strategies, formal MCSs, and traditional management practices, as did alignment between differentiation strategies, informal MCSs, and modern management practices. Samagaio et al. (2018) also looked at strategies finding that internal factors such as cost leadership strategy, differentiation strategy, and structural decentralization were factors in the adoption of MCSs in start-ups, supporting the use of the configurational analytical technique to study the interrelated aspects of external and internal factors impacting MCS use.

In contrast to those findings, Siska (2018) stated that there was alignment between the strategic choice of differentiation and strategic performance management system attributes, but not with the cost-leadership strategy, and that firms pursuing a differentiation strategy should do so in alignment with an MCS (focused on values and belief controls) and a strategic performance management system. Siska (2018) went on to state that strategic performance management systems, in conjunction with MCSs,

allowed firms to perform better than competitors because of the improved implementation of the strategy. SME accounting managers' approach to strategy was a significant contingent factor impacting their choice of modern costing strategies.

Hasyim and Jabid (2019) looked specifically at the impact of cost accounting systems on supply chain operations by considering internal and external factors finding that in addition to firm size and market competition, product diversity also impacted the extent of cost accounting system use. Pavlatos (2018) studied the interconnection between contextual factors, the level of strategic cost management use, and business performance and found that in addition to PEU, size, and strategy, structure and organizational life-cycle stage positively influenced the use of strategic cost management. Strategic cost management positively impacted firm performance, upholding the use of the CT as applicable to MA in studies of MCS (Pavlatos, 2018).

Analysis of the presence and power of the relationship between firm variables such as manager profile, operations of the MA department, and managers' assessment of the appropriateness of the MAS found the presence of moderate relationships between the appropriateness of MAS and both the manager profile and the operations of the MA department (Zazycka et al., 2017). Otley (2016) stressed the need for researchers to study firms' MCSs not in isolation, but in context to their environmental contingencies. The structure of firms' MCSs impacted the ability of their modern costing strategies to improve profitability.

Baird and Su (2017) analyzed the relationship between the depth of control present in firms and various performance measures such as financial, customer, learning

and growth, quality and internal business processes, and the organizational performance measures of cost, delivery, and flexibility. The depth of various performance measures used played a role in the level of management control and performance in terms of cost, delivery, and flexibility, and performance measures helped managers institute control mechanisms that supported increased performance (Baird & Su, 2017). Baird and Su (2017) and Godil and Shabib-ul-Hasan (2018) stressed the need to look at the performance of MCS packages from a holistic approach. The influence of MCSs on the adoption of modern costing strategies received attention using direct observations of the AIS and MCS supporting cost accumulation and product and service costing.

Contingency theory as applicable to management accounting in studies of strategic management accounting. The primary underlying tenet of the CT as applicable to MA is the notion that both firm structure (MA systems) and firm context (contingent factors) impact firm performance (Kalkhouran, Nedaei, & Rasid, 2017; Otley, 1980; Otley, 2016). Using the CT as applicable to MA, Kalkhouran, Nedaei, and Rasid (2017) found that a positive relationship existed between a Chief Executive Officer's (CEO's) education and a firm's SMA practices, while a strong positive relationship between the CEO's involvement in networks and SMA also occurred. An indirect relationship between SMA, CEO education and involvement in networks, and company performance was noted by Kalkhouran et al. (2017). Lay and Jusoh (2017) assessed the relationship between SMA and the organizational capabilities of market orientation, entrepreneurship, innovativeness, and organizational learning finding that the four organizational capabilities together positively affected a firm's position and

performance. Supporting the use of market orientation, Turner, Way, Hodari, and Witteman (2017) considered that, but also assessed firm strategy and size to determine the impact on SMA use. Firms' level of SMA impacted its use of modern costing strategies.

Criticisms of the contingency theory as applicable to management

accounting. Bromwich and Scapens (2016) found that the CT as applicable to MA peaked in use and fell just under social and critical theories in terms of popularity in the greater context of MA research. Numerous theories of MAPs exist, but those theories did not have a significant impact on MAPs use (Bromwich & Scapens, 2016). Granlund and Lukka (2017) stated that researchers took for granted CBMA research and did not regularly validate it due to an over-reliance on an institutionalized paradigm. Siska (2018) found that CT as applicable to MA studies vary in the evidence produced in part because some contingencies are taken out of context and studied in isolation.

Granlund and Lukka (2017) proposed an alternative means to conduct CBMA research stressing the need to break away from the overly-used institutionalized paradigm that uses uncertainty as a primary variable, to research originating from the emic domain enabling a broader scope of more impactful research. Otley (2016) stated that consideration of firms' context is necessary by taking a more custom approach when using the CT as applicable to MA. Comparison of the contingency theoretical framework and the equilibrium theory often occurs because fit allows for equilibrium between firms' MCS and its contextual factors (Pavlatos, 2018), yet issues occur when firms achieve fit and fail to adapt to new changes (Abba et al., 2018). Still, the CT as applicable to MA

has unrivaled backing in the field of accounting research (Abba et al., 2018). The CT as applicable to MA is a widely-used framework for studies of MA since 1998 (Ngoc & Takacs, 2018), and was, therefore, the optimal choice of a conceptual framework for this study.

Alternatives to the Use of Contingency Theory in Management Accounting

Although the CT as applicable to MA is the predominant research theory found in studies of SME accounting managers' use of MAPs (Abba et al., 2018), the support of alternative theories exists. Prencipe, Bar-Yosef, and Dekker (2014) noted that prior studies of MAPs' adoption in SMEs focused on a variety of theories including the agency theory, resource-based view (RBV) theory, stewardship theory, and the socioemotional wealth theory. Also present in the literature was the upper echelons theory (Kalkhouran et al., 2017), and the diffusion theory (Ngoc & Takacs, 2018). The alternative theories to the CT as applicable to MA received discussion in the following paragraphs.

Resource-based view theory. Proponents of the RBV theory suggest that firms operate best when they can develop rare resources not easily replicated by competitors (Prencipe et al., 2014). Much of the literature on SMEs' sustainability used RBV as the theory explaining factors affecting the long-term success of SMEs (Alonso, Bressan, & Sakellarios, 2016; Jorge, Couto, Veloso, & Franco, 2017). Goddard and Simm (2017) used the RBV theory to find that both MAPs and performance measurement techniques improved firms' strategic abilities. Mitter and Hiebl (2017) used RBV in their discovery that MA influences international entrepreneurship, but that influence was dependent upon the phase of international entrepreneurship and the mode of internationalization.

To focus on the impact of SMA techniques on a firm's internal organizational capabilities, Lay and Jusoh (2017) used the RBV theory. Kellermanns, Walter, Crook, Kemmerer, and Narayanan (2016) used the RBV theory as a framework in distinguishing resources into two categories, those that are tangible, and those that are intangible, defining capital as either human, organizational, financial, physical, or relationship. Studies concerning factors that create growth in micro and small businesses used the RBV theory to find that 13 individual sub-factors can explain micro-firm growth (Khan & Quaddus, 2017). In conjunction with the instrumental stakeholder approach and taking an RBV perspective, Campbell and Park (2017) found that social capital, entrepreneurial orientation, intellectual capital, and management of the community relationship as a key stakeholder all contributed to improved performance in SMEs.

Agency theory. The agency theory focuses on the alignment between a principal and an agent, and the relationship between the two contractual parties, and assumes agents to be self-serving individuals (Prencipe et al., 2014). The agency theory has a presence in studies of MA, as agents seek control in MA systems, meaning agents and principals should have shared interests for this arrangement to work effectively (Gavidia, 2016; Legaspi, 2018). The use of the agency theory in studies of MAPs allows for insights into the structure of firms and addresses how accounting practices and procedures can help maintain firms' structure (Tiessen & Waterhouse, 1983). Proponents of the agency theory stress the need for changes in accounting practices to recognize the agent-principal relationship to avoid resistance (Tiessen & Waterhouse, 1983).

Other theories. The stewardship theory contends that individuals try to act on behalf of the entire organization and want to provide the greatest good (Prencipe et al., 2014), while the socioemotional wealth theory is prevalent in studies looking at the family dynamics of SMEs and how those dynamics influenced the adoption of MAPs (Huerta, Petrides, & O'Shaughnessy, 2017; Prencipe et al., 2014). Huerta et al. (2017) found that three actors can propose accounting practices in small family firms: employees, non-family, and external experts, and that the degree of influence of family employees is not linked to the closeness of the family relationship, but to competence and experience. Supporters of the socioemotional wealth theory contend that firms will make decisions not based solely on financial performance, but based on the need to preserve their socioemotional wealth (Huerta et al., 2017; Prencipe et al., 2014).

The upper-echelon theory states that executives' experiences and personalities drive the decisions they make, as evidenced by Kalkhouran et al.'s (2017) findings that SMA implementation was the result of perceived environmental factors, CEO experience/education, and AMTs. The diffusion theory explains the communication of innovation through various parties (Ngoc & Takacs, 2018). Ngoc and Takacs (2018) used the diffusion theory to explain the adoption of new modern MAPs in developing countries. To directly study the MAPs used or adopted in SMEs, the CT as applicable to MA is optimal because it analyzes the relationship between the organization, its structure, and its environment, and explains how an organization's structure fits with the contingencies it meets and the MAPs it uses, thereby impacting its level of performance (Otley, 1980, 2016).

Factors Impacting Management Accounting Practice Adoption in Small- and Medium-Sized Enterprises

Otley's (1980) review of the literature on the CT as applicable to MA underscored the primary debate concerning the use of this theory to study SMEs' adoption of MAPs, which is that the underlying tenets of the theory vary dramatically across studies. Kihn and Nasi (2017) found a wide variety of management and cost accounting principles, evidenced by the evolution of budgeting and organizational control practices to more modern cost allocation and performance measurement evaluation techniques. As organizational performance is the most widely used dependent variable in CT as applicable to MA studies, Otley (2016) stressed the importance of accurately quantifying this dependent variable. To effectively study the use of MAPs, Otley (2016) proposed that researchers study management control *packages* rather than studying arbitrary variables independent of one another. Otley (2016) stressed the importance of organizational context with the idea being to move away from standardized questionnaires which narrow the contingent view to data collection techniques that capture the organizational context of the MCS. Semistructured interviews served as the primary data collection technique in this study which allowed for a greater understanding of the organizational context.

The use of MAPs in SMEs as a means of improving performance is an area of study showing increased attention since the late 1990s (Shields & Shelleman, 2016). Well-documented in the literature are many of the factors affecting the adoption of MAPs within SMEs (Samuelsson et al., 2016; Shields & Shelleman, 2016). The information's

perceived usefulness in decision-making was one of the main factors affecting the adoption of MAPs in SMEs because firms who felt MAPs offered useful information adopted these practices at a higher rate (Armitage et al., 2016; Shields & Shelleman, 2016). Factors studied for their impact on the adoption of MAPs in SMEs included organization size (Legaspi, 2018; & Ngoc & Takacs, 2018), external environmental factors (Godil & Shabib-ul-Hasan, 2018; Ngoc & Takacs, 2018), AMTs (Azudin & Mansor, 2018; Godil & Shabib-ul-Hasan, 2018), and internal environmental factors (Azudin & Mansor, 2018; Godil & Shabib-ul-Hasan, 2018). Also impacting the adoption of MAPs in SMEs were CEO characteristics (Legaspi, 2018; Ngoc & Takacs, 2018), levels of technology (Azudin & Mansor, 2018; Legaspi, 2018), firm strategy (Godil & Shabib-ul-Hasan, 2018; Legaspi, 2018), firm structure (Ngoc & Takacs, 2018), firm age (Armitage et al., 2016), firm's potential (Azudin & Mansor, 2018), and firm's level of resources (Cuzdriorean, 2017; Legaspi, 2018). Factors can both positively and negatively impact the adoption of MAPs in SMEs.

Factors positively associated with management accounting practice adoption in small- and medium-sized enterprises. The complexity and culture of firms' internal environment positively impacted SMEs' adoption of MAPs (Godil & Shabib-ul-Hasan, 2018; Ngoc & Takacs, 2018). Firms who experienced changes in the environment in which they operated such as increased market competition, political unrest, economic uncertainty, and propensity for internationalization were also more likely to adopt MAPs (AlKulaib, Al-Jassar, & Al-Saad, 2016; Ngoc & Takacs, 2018). Increasing the likelihood of MAPs adoption in firms were personal characteristics of ownership/executive

management such as owner age and motivation, education, commitment, involvement, managerial level, years of experience, and entrepreneurial orientation (AlKulaib et al., 2016; Samuelsson et al., 2016). The level of training and organizational skills of firms' staff positively impacted firms adoption of MAPs (AlKulaib et al., 2016), as did firm size (AlKulaib et al., 2016; Ngoc & Takacs, 2018), and business leaders' commitment to AMTs (AlKulaib et al., 2016; Godil & Shabib-ul-Hasan, 2018).

SMEs' choice of strategy (Godil & Shabib-ul-Hasan, 2018; Legaspi, 2018), type of structure (Ngoc & Takacs, 2018), age (Armitage et al., 2016), and access to resources (Cuzdriorean, 2017; Legaspi, 2018) all positively impacted firm's adoption of MAPs. Family played a significant role in SMEs' adoption of MAPs, as a high degree of family influence and high level of perceived competence and experience had a positive relationship to the likelihood of proposed implementation (Huerta et al., 2017; Prencipe et al., 2014). The use of technology positively impacted SMEs' adoption of MAPs (Azudin & Mansor, 2018), as researchers found a positive correlation between cloud-computing, infrastructure, and performance (Cleary & Quinn, 2016). My interview questions addressed the contextual factors impacting SME accounting managers' choice of modern costing strategies.

Factors negatively associated with management accounting practice adoption in small- and medium-sized enterprises. Contrasting the work of Prencipe et al. (2014) and Huerta et al. (2017), Samuelsson et al. (2016) found that family ownership structure caused small businesses to have fewer MAPs than non-family-owned businesses. Studies showed that the younger a firm was and the more formative the life-cycle stage, the less

likely firms were to have extensive MAPs (Armitage et al., 2016). High costs of adoption or limited depth of resources also limited the extent to which SMEs used MAPs (Cuzdriorean, 2017). Negatively influencing the adoption of MAPs in SMEs was a lack of management commitment and education, resistance to change, or inability to influence market price (Cuzdriorean, 2017). Godil and Shabib-ul-Hasan (2018) and Legaspi (2018) found that the external environment in which a firm operated did not significantly influence their adoption of MAPs, starkly contrasting the work of Armitage et al. (2016) and Ngoc and Takacs (2018) who argued otherwise.

Found not to influence the adoption of MAPs in SMEs were AMTs (Azudin & Mansor, 2018) which stood in contrast to the work of AlKulaib et al. (2016) and Godil and Shabib-ul-Hasan (2018) who found a positive correlation. Internal environmental factors were not an influence on SMEs' adoption of MAPs according to Azudin and Mansor (2018), yet Godil and Shabib-ul-Hasan (2018) and Ngoc and Takacs (2018) disagreed. Legaspi (2018) found that CEO characteristics did not influence firms' adoption of MAPs, while most other researchers found evidence to the contrary (AlKulaib et al., 2016; Samuelsson et al., 2016). Moreover, though Azudin and Mansor (2018), and Cleary and Quinn (2016) argued that a firm's commitment to technology was a factor impacting their adoption of MAPs, Legaspi (2018) did not find a commitment to technology to be a direct factor in firms' adoption of MAPs. Internal and external contingent factors can negatively impact the adoption of MAPs in SMEs.

Management Accounting Practices in Small- and Medium-Sized Enterprises

Commonly-used management accounting practices in small- and medium-sized enterprises. MAPs such as those used for calculating product and service profitability and customer profitability, as well as those that compared actual results to budget through variance analysis, had high rates of usage within SMEs (Cuzdriorean, 2017; Shields & Shelleman, 2016). Armitage et al. (2016) assessed 19 strategies within the four categories of costing systems, budgeting systems, responsibility center reporting, and analysis for decision-making and found that budgeting, financial statement analysis, use of costing systems, variance analysis, and customer profitability analysis all had use. Chenhall and Langfield-Smith (1998) identified a series of MAPs including traditional MA techniques, activity-based techniques, balanced performance measures, employee-based measures, benchmarking, and strategic planning finding that traditional and modern MAPs provided high benefits to firms.

Cuzdriorean (2017) took a different view and assessed the use of MAPs from a traditional versus modern perspective concluding that SMEs use a small number of traditional MAPs such as budgeting, and modern MAPs such as benchmarking and performance reporting. Shields and Shelleman (2016) and Jerman (2017) found that addressing profitability using budgeting practices and performance measures such as responsibility centers, was a key tenet of MAPs' use in SMEs, and that the return on investment of micro SMEs increased when firms computed their product and service profitability and took the time and money necessary to analyze customer profitability. Alzoubi (2018) found that modern MAPs such as target costing, kaizen costing, and JIT

costing received moderate use, while AlKhajeh and Khalid (2018) found that the presence of formal costing systems positively impacted SME performance. Contingencies impacted the frequency of MAPs' use within SMEs.

Rarely-used management accounting practices in small- and medium-sized enterprises. Cuzdriorean (2017) found that many of the individual MAPs assessed had little to no use in SMEs due to the cost and difficulty of implementation, perceived lack of usefulness, or the general impression that MAPs were optional in business operation. For instance, Armitage et al. (2016) found MAPs such as flexible budgeting, capital spending, and cost behavior analysis; and costing systems such as standard costing, quality costing, and target costing were all rarely used techniques within SMEs. Laureano et al. (2016) developed a new model to classify SMEs' use of MAPs, updating Kaplan's model, after finding that none of the 58 firms studied had advanced or integrated MAPs and tended to use only those MAPs aimed at external reporting measures. Understanding what modern costing strategies SME accounting managers use to improve profitability could increase firms' use of these advanced methods.

SMEs used very few modern MAPs in their daily operations (Cuzdriorean, 2017; Legaspi, 2018). Chenhall and Langfield-Smith (1998) found that activity-based techniques provided the least benefit to firms surveyed, but that activity-based techniques were effective when used in conjunction with traditional accounting practices. Alzoubi (2018) and Legaspi (2018) confirmed the findings of Chenhall and Langfield-Smith (1998) finding that ABC and the BSC received the least amount of use in SMEs. Legaspi (2018) found very little use of responsibility accounting, transfer pricing, target costing,

JIT costing, kaizen costing, or lean costing in SMEs. Contingent factors impacted the use of modern MAPs in SMEs.

Modern Costing Systems as a Means of Improved Profitability in Small- and Medium-Sized Enterprises

Cost management systems are an integral component of the MCS of a firm (Siska, 2016). Advances in technology, innovations in product design, and increased globalization forced SMEs to modernize their internal costing systems to remain competitive (Ismail, Isa, & Mia, 2018; Novak & Vencalek, 2016). When SME accounting managers used systems to perform more accurate cost management, they increased the operational success of the firm (Uyar, 2019). Discovering what modern costing strategies SME accounting managers use to improve profitability could support firm success.

Management control systems. Bahri, St-Pierre, and Sakka (2017) focused on creating a performance measurement management system for SMEs as a means of linking business practices to financial results, finding that some business practices have a quicker effect on business performance than other practices that have a deferred effect. Pekkola, Saunila, and Rantanen (2016) also analyzed performance measurement systems in SMEs, finding that a flexible performance measurement system design, with underlying constant financial measures, positively impacted SMEs' profitability. Myrodia, Kristjansdottir, and Hvam (2017) analyzed the impact of product configuration systems on the cost calculations and profitability of products, with the goal of increased accuracy of both measures. The implementation of product configuration systems by

SME accounting managers supported better control of product assortment and better sales decisions regarding optimal product mix resulting in increased accuracy in cost calculations, particularly in the selling process (Myrodiá et al., 2017). Mater and Kanasro (2018) found that advanced managerial accounting strategies, including financial control systems, positively impacted SME profitability.

Velasquez, Suomala, and Jarvenpaa (2015) analyzed cost-consciousness from an MA perspective studying a series of cybernetic controls used in MCSs. Cybernetic controls include items such as using conservative budgetary and financial goals; using business performance measures and indices; elevating the sophistication of costing and cost allocation techniques; and implementing more modern types of costing systems such as ABC, case-mix accounting systems, product-budgeting systems, and targeted-cost approaches (Velasquez et al., 2015). The use of MCSs supported the identification of drivers of cost-consciousness from the five different perspectives of (a) culture controls, (b) administrative controls, (c) reward/compensation controls, (d) planning controls, and (e) cybernetic controls (Velasquez et al., 2015). Cost consciousness drove some SME accounting managers to implement modern costing strategies to improve profitability.

Activity-based costing. SMEs are no longer able to discount the importance of ABC given the rising global and competitive nature of the business economy and the level of uncertainty and dynamics that exists (Pekkola et al., 2016; Shea et al., 2018). Wouters and Stecher (2017) devised a new costing system that incorporated more than just direct materials costs, allowing for the assessment of profitability on a more comprehensive basis. Incorporating the use of practical capacity to compute rates and

using a combination of machine and labor hours incorporating real-time data within the manufacturing environment, helped researchers understand the limitations of time-driven, activity-based costing (TDABC), and underscored the importance of data discovery in the design of costing systems (Wouters & Stecher, 2017). Also studying TDABC was Berikol (2017) who found that TDABC enabled the use of more accurate cost information in SMEs, which positively contributed to profitability. Rajnoha and Dobrovič (2011) and Dejnega (2010) identified ABC and TDABC systems as tools for providing more accurate cost calculations. ABC and TDABC were modern costing strategies used in limited contexts by this study's participants.

Shea et al. (2018) highlighted the tactical and strategic benefits that an ABC system can yield to SME accounting managers, including product profitability analysis which supports marketing and pricing decisions. The presence of modern costing systems such as ABC improved SME accounting managers' profitability through the use of advanced cost drivers and more accurate cost pool measurements (Nasution & Siregar, 2018; Shea et al., 2018), and by a focus on the connection between product cost and decisions about firm pricing (Shea et al., 2018). Pickering (2018) found that SME accounting managers in lean organizations can derive benefit from ABC contingent on the organization's level of complexity regarding product diversity and degree of sharing resources across value streams, and on the diversity of customer interactions. Small business accounting managers in lean firms should analyze the cost-benefit trade-off of ABC, carefully determining its impact on profitability (Pickering, 2018).

Life-cycle costing. Product life-cycle costing, known as life-cycle costing,

emerged in response to the modernization of production systems resulting from advances in technology and increased global competition (Contuk, 2018). Life-cycle costing differs from conventional costing systems by taking a broader approach to costing incorporating costs borne in all five stages of manufacturing: product concept, product design, product improvement, production, logistic support (Contuk, 2018). Knauer and Moslang (2018) found that life-cycle costing systems and target costing systems are strongly interrelated, while Contuk (2018) stated that life-cycle costing includes target costing in the first stage of total life-cycle costs. Life-cycle costing systems incorporate costs at both the early and late stages of a product's life-cycle which supports cost-management goals and firm profitability through better identification of cost drivers (Knauer & Moslang, 2018). SME accounting managers' use of life-cycle costing systems improved business performance (Uyar, 2019).

Target costing. Target costing systems provide SME accounting managers a strategic method of deriving an acceptable cost to support profit (Contuk, 2018). SME accounting managers use target costing system strategies in the product design and development stage to drive costs to the desired level (Contuk, 2018). Market orientation, early cost management, and cooperative efforts are widely believed to be the primary attributes of target costing (Ahn, Clermont, & Schwetschke, 2018). Sharafoddin (2016) stated that target costing is a customer-focused strategy that enables firms to calculate the optimal product price based on customer needs, level of competition, and desired profitability. While Uyar (2019) said that the use of target costing improves business performance, Baharudin and Jusoh (2019) stressed the importance of customizing target

costing strategies to fit the contextual environments in which firms operate. Rajnoha and Dobrovič (2011) and Dejnega (2010) identified target costing systems as a means of providing more accurate cost calculations. Target costing systems and lean costing systems are interrelated as both systems focus on meeting the price demands of the market while deriving profit (Pickering, 2018).

Kaizen costing. Kaizen costing is a modern costing system that focuses on continuous improvements to reduce product costs (Contuk, 2018). Rajnoha and Dobrovič (2011) and Dejnega (2010) stressed the ability of systems such as kaizen costing to provide more accurate cost calculations due to the focus on cost allocations by activity and process. Cuzdriorean (2017) found that some SME accounting managers do not use kaizen costing systems due to the high costs of implementation and lack of management commitment. Kaizen costing strategies are useful during the production process as a means by which to reduce costs and maintain continuous improvement (Bochenek, 2018). Kumar, Dhingra, and Singh (2018) discussed the implementation of kaizen costing and lean strategies using value stream mapping as effective in recognizing opportunities for continuous improvement in SMEs. Debnath (2019) studied the use of kaizen strategies to improve customer satisfaction in competitive market situations.

Lean costing. Pickering (2018) discussed the use of lean costing systems as an improved method of analyzing costs to support management decision-making. The use of lean costing methods, in conjunction with decreased levels of inventory, allows firms to move away from valuing products at the individual level to valuing products in the aggregate at the value stream level (Pickering, 2018). Ismail et al. (2018) found that

SMEs experiencing increased levels of market competition adopted lean practices and used MAS information and that the use of MAS information mediated the impact of lean practices on business profitability. External contingencies such as market competition forced some SME accounting managers to adopt modern costing strategies to improve profitability.

Quality costing. Quality costs are costs associated with the prevention, detection, and correction of issues related to product or service quality (Garrison et al., 2016). Chatzipetrou and Moschidis (2016) found that there is a direct relationship between organizational size and investment in quality costs and that small- and micro-companies showed little interest in quality costing and did not perceive it as useful. Armitage et al. (2016) supported the work of Chatzipetrou and Moschidis (2016) finding that SMEs rarely used quality costing strategies. Chatzipetrou and Moschidis (2016) found no evidence that the subsector of manufacturing a company operates within impacts their likelihood to use quality costing. Kerfai, Ghadhab, and Malouche (2016) found that manufacturing organizations using quality costing systems had higher rates of investment in prevention and appraisal strategies and lower internal and external failure rates and that this positively impacted firm performance.

The Impact of Small- and Medium-Sized Enterprises' Profits on Local Communities

When SMEs are profitable, there is an improved ability to monetarily support the local communities in which they operate (Johnson et al., 2017; Razalan, Bickle, Park, & Brosdahl, 2017). Profit is a contributing factor in small business sustainability (Winget et al., 2017). The growth and long-term economic sustainability of SMEs positively impact

the economies, residents, and future growth of the communities they serve (Johnson et al., 2017; Park & Campbell, 2017). Profitability contributes to SME success (Eschker, Gold, & Lane, 2017). Communities and regions rely on the success of their local businesses as they enhance their economies contributing new products and services, stability and job creation, and economic growth to the area (Eschker et al., 2017; Johnson et al., 2017). Successful small businesses positively impact the vibrancy and vitality of their communities (Eschker et al., 2017; Park & Campbell, 2017).

Including the community as a key stakeholder in the SME's strategic vision can improve business performance (Campbell & Park, 2017). Socially responsible firms can benefit in the long-term from goodwill and sustainability by using profits to make contributions to society (Winget et al., 2017). An outcome of social responsibility can be the maximization of profits for small businesses (Razalan et al., 2017).

The support of SMEs by the communities they serve instills a sense of value, worth, and dedication, along with pride and ownership in the success of local businesses (Johnson et al., 2017; Park & Campbell, 2017). Marketing campaigns advocate the importance of consumers shopping locally stressing the economic, social, and ecological benefits for the local community (McCaffrey & Kurland, 2015). Johnson et al. (2017) highlighted the dependency that rural regions have on the success of their local businesses underscoring the importance of the economic sustainability of SMEs in these rural communities.

Park and Campbell (2017) analyzed SMEs' corporate citizenship in the local communities where they operate, citing the unique nature of the relationship between

SMEs and the local community. CC refers to the socioeconomic actions taken by a firm in its role as a member of the local community (Gardberg & Fombrun, 2006). The level of philanthropic activities, such as contributions to charities and involvement in community betterment programs, an SME engages in defines the degree of their CC (Park & Campbell, 2017). When SMEs are profitable, they are more able to engage in philanthropic activities (Razalan et al., 2017).

Park and Campbell (2017) focused on the relationship between SMEs and their communities by identifying SME owners' degree of collectivism and market orientation as preliminary indicators of CC, finding that reciprocity by the community was a tangible benefit of SMEs' level of CC. SME owners' and managers' position within the community and social identity, along with their impressions of community need, impacted their decisions about philanthropy (Park & Campbell, 2018). Identification of SMEs' mutual relationship with the local community highlights the need to sustain and grow SMEs through various improvement efforts such as successful MAPs (Johnson et al., 2017).

Transition

In Section 1, I introduced the study by providing an overview of the problem that many SMEs use little to no modern costing strategies which can negatively impact profitability. The key components in this section included the identification of the problem and the purpose of the study, the nature of the study, the research question, conceptual framework, significance of the study, and an in-depth review of the literature. The review of literature focused on the history of MA research and trends in the

literature, MA research theories with a specific focus on the CT as applicable to MA, factors impacting the adoption of MAPs in SMEs, MAPs used in SMEs, modern costing strategies as a means of improved profitability in SMEs, and the impact of small- and medium-sized enterprises' profits on relationships with local communities.

The review of the literature indicated that many factors impact the adoption of MAPs in SMEs and that the use of modern costing strategies has a direct impact on SME profitability. The review of the literature also showed that the CT as applicable to MA underlies the majority of the studies on modern MAPs and that the profitability of SMEs has a positive impact on their relationship with local communities. Section 2 includes the research method and design; information on the participants; data collection, organization, and analysis; and methods for achieving reliability and validity in this qualitative multiple case study. In Section 3, I address the study's findings, the application to professional practice, the implications for social change, and the recommendations for future study.

Section 2: The Project

Purpose Statement

The purpose of this qualitative multiple case study was to explore the modern costing strategies SME accounting managers use to improve profitability. The population was seven SME owners, chief financial officers (CFOs), and administrators who manage the accounting function for their organization in New Hampshire and who successfully implemented modern costing strategies to improve profitability. The implications for social change include the ability of SME accounting managers to use increased profits to improve the quality of life for residents of the local community. With increased profits, SME accounting managers could increase sponsorships of special events or increase donations to schools and outreach organizations supporting local community residents, which could positively contribute to social change.

Role of the Researcher

The role of the researcher is integral to qualitative studies as the researcher is the data collection instrument (Marshall & Rossman, 2016). The role of the researcher is to understand the meanings of participants' imparted thoughts related to the phenomenon under study (Yin, 2018). My role as the researcher was to find participants and gain their commitment to partake in the study, to interview those participants after receiving their informed consent, and to analyze the results of those interviews in conjunction with other data collection techniques to formulate the study's findings. In this study, the goal was to gain information about the specific business problem through semistructured interviews

with SME accounting managers, direct observations of the AIS used to support product and service costing, and reviews of documentation supporting modern costing strategies.

Researcher identity, experience, and values can introduce bias in qualitative studies (Marshall & Rossman, 2016). As a current SME CFO and business owner in New Hampshire and an educator in the field of accounting, I have experience with modern costing strategies. However, I had no personal or professional relationships with the participants. Marshall and Rossman (2016) stressed the importance of identifying and articulating researcher bias so that management of those biases can occur and that readers of the study can identify what affects those biases may have on the study.

The *Belmont Report* addresses the basic ethical principles of respect for persons, beneficence, and justice in research including human subjects and includes guidelines to ensure researchers' adherence to those ethical principles (U.S. Department of Health and Human Services, 2014). Respect for persons means recognizing that individuals are autonomous and entitled to make their own choices (Ross, Iguchi, & Panicker, 2018). Beneficence concerns the need for researchers to ensure that no harm befalls participants by minimizing risks and maximizing benefits, while justice entails the equal distribution of the benefits and burdens of research on humans (Ross et al., 2018). In conjunction with the guidelines outlined in the *Belmont Report*, I ensured that each participant was made aware of the procedures put in place to prevent potential ethical issues during the data collection process. All participants reviewed and signed an informed consent form before engaging in the interview process. The use of an interview protocol helped to ensure that the interview process was consistent with best practice interviewing

techniques (see Appendix A). Best practice interviewing techniques support the uniformity, quality, and quantity of the information obtained (Heydon & Powell, 2018). The interview protocol consisted of a template used while interviewing participants that ensured the consistency of wording in the explanation of the study, the communication of the procedures put in place to ensure ethical data collection, and the dissemination of the interview questions to the participants.

Acknowledging bias and putting practices into place to mitigate bias is critical to conducting qualitative research (Marshall & Rossman, 2016). To mitigate bias and avoid viewing data through a personal lens or perspective, I used member checking. Member checking helps to ensure credibility in the data collection process by validating participants' responses (Birt, Scott, Cavers, Campbell, & Walter, 2016). Member checking allows participants to check the accuracy of the researcher's interpretation of the data collected to ensure that it aligns with the participants' responses (Birt et al., 2016).

In conjunction with member checking, an interview protocol aided in mitigating bias (see Appendix A). The use of an interview protocol helps researchers maintain consistency in the interview process and supports best practice interviewing techniques (Heydon & Powell, 2018). I also used a reflexive journal to mitigate potential bias. A reflexive journal allows the researcher to note methodological decisions and to use one's values and interests to reflect on the research process as it occurs (Lincoln & Guba, 1985).

Participants

The overarching research question for this study was, What modern costing strategies do SME accounting managers use to improve profitability? Outlining participant eligibility requirements aids the researcher in filtering the potential participants to only those who can add value to the study and whose knowledge and experience meet the predetermined criteria that align with the overarching research question (Hagaman & Wutich, 2017; Padgett, 2017; Palinkas et al., 2015). The ability of researchers to enhance the quality and depth of information is possible when participants who possess extensive knowledge and experience with a topic are the desired population of a study (Hagaman & Wutich, 2017). In using purposive sampling, I ensured participants' eligibility for this study by identifying and including only those participants with knowledge and experience using modern costing strategies to improve profitability.

Purposive sampling is a nonprobability sampling technique that enables researchers to choose a sample from the population and is appropriate when the point of the research is not to generalize the findings or when limitations of resources, time, and workforce are present (Hagaman & Wutich, 2017; Marshall & Rossman, 2016; Palinkas et al., 2015). Purposive sampling allows researchers to ensure that the cases selected will provide meaningful and useful information to study the phenomenon and to ensure that the participant embodies the knowledge and experience desired (Hagaman & Wutich, 2017; Padgett, 2017; Palinkas et al., 2015). The use of purposive sampling in this study ensured that the participants selected for the study had knowledge of and experience

using modern costing strategies, thereby ensuring that the participants' qualifications aligned with the research question.

The participant eligibility criteria for this study included SME accounting managers at firms in operation for at least 5 years in New Hampshire, who had at least 3 years of experience in an MA role, and who replied to the e-mail invitation to participate confirming their 3 years of experience and their use of modern costing strategies to improve profitability (see Appendix B). Shields and Shelleman (2016) used data from the Small Business Development Corporation to access a selection of firms in the northeast area of the United States in their study of MA use in micro and small businesses. Following the approach of Shields and Shelleman (2016), I accessed participants by performing web searches of SMEs operating in New Hampshire, using websites that included NH Economy (2019), New Hampshire Employment Security (2019), and other New Hampshire Chamber of Commerce websites.

I established working relationships with participants by using clear communication throughout the research process, by using informed consent, and by establishing trust with participants. Establishing trust with participants can be accomplished by conveying the meaningful outcomes or new information that the research may provide and by addressing any misconceptions the participants may have (Li et al., 2016). I used e-mail to communicate details about study participation with individuals who met the study's criteria. Providing participants a consent form outlining the details of the study and the steps taken can help to minimize their risk of harm (Marshall & Rossman, 2016; Yin, 2018; Zahle, 2017). Informed participants underlie a

strong working relationship enabling the dissemination of meaningful, quality information (Lie & Witteveen, 2017). Willing participants received an informed consent form by e-mail prior to the interview outlining their voluntary, uncompensated participation in this study, along with information regarding the purpose and intent of the study and the steps taken to ensure participants' confidentiality and privacy.

The use of semistructured interviews in studies of modern costing strategies was evident in the work of Laureano et al. (2016) who used a case study strategy and interviews to characterize the level of maturity in firms' MA using Kaplan's four-stage model for classification. Myrelid and Olhager (2015) used interviews within a case study to analyze lean accounting and throughput accounting as a control measure as companies move to more AMTs. Semistructured interviews are prevalent in case studies and provide helpful insights from the perspective of the participant using specific questions that follow a predetermined script (Marshall & Rossman, 2016; Saunders et al., 2016; Yin, 2018). I used semistructured interviews in this study to seek the modern costing strategies SME accounting managers employed to improve profitability. An e-mailed communication with each participant detailed the date and time for the semistructured interview to occur, upon receipt of the completed informed consent form by e-mail.

Research Method and Design

Research Method

A qualitative method was the choice for this study. Qualitative research is practical, interpretive, and contextual (Marshall & Rossman, 2016; Saunders et al., 2016; Yin, 2018). The qualitative methodology best supports the use of the CT as applicable to

MA in answering the research question concerning the modern costing strategies SME accounting managers use to improve profitability. Qualitative research focuses on context (Marshall & Rossman, 2016), thereby dovetailing with the CT as applicable to MA which seeks to explain how organizations' accounting systems depend upon management's response to environmental contingencies (Otley, 1980). The use of qualitative research allows researchers to understand the meanings of participants' imparted thoughts related to the phenomenon under study (Marshall & Rossman, 2016; Yin, 2018).

Data collection techniques that capture numeric data are the foundation of the quantitative methodology (Saunders et al., 2016). Quantitative researchers examine relationships through the measurement of variables and the testing of hypotheses making this method a useful tool for justification of research (Park & Park, 2016). Mixed-methods researchers use a combination of quantitative and qualitative methods in the same study (Saunders et al., 2016). It was not my intention to test hypotheses or make predictions, so neither a quantitative nor mixed-methods approach was appropriate for this study. Qualitative research supports the process of discovery through the procurement of useful data and the dissemination of that data in meaningful ways (Park & Park, 2016), and was the best method for addressing the study's research question.

Research Design

The case study research design was the appropriate choice for this study as the case study permits the researcher to understand the real-life phenomena in its contextual setting bounded by time and place (Alpi & Evans, 2019; Saunders et al., 2016; Yin,

2018). Case study research design necessitates an in-depth study of multiple sources within a specified period with the derivation of multiple themes (Alpi & Evans, 2019; Marshall & Rossman, 2016). Evidence used in case study designs can come from multiple sources such as interviews, documentation, archival records, observations, and visible artifacts (Alpi & Evans, 2019; Marshall & Rossman, 2016). The interview is arguably the most important source of information in a qualitative case study research design (Marshall & Rossman, 2016; Nascimento et al., 2018; Yin, 2018), and as such, a semistructured interview protocol served as the primary approach to evidence gathering (see Appendix A).

Alternative qualitative research designs included phenomenological and ethnography. A phenomenological design supports an understanding of participants' lived experiences and analysis of those experiences to derive meaning (Marshall & Rossman, 2016; Saunders et al., 2016). I identified strategies used by SME accounting managers, not the lived experiences with these strategies, so a phenomenological approach was not appropriate for this study. Also receiving consideration was ethnography. Social groups and their establishment and maintenance of culture are the focus of ethnographic researchers, and as such, participant observation is the primary data collection method (Marshall & Rossman, 2016). As the intent of this study was not to focus on human groups and culture, the ethnographic design was not appropriate.

Data saturation in qualitative research is the point at which no new patterns, themes, or typologies are likely to emerge from further research (Weller et al., 2018). Qualitative validity can be compromised when researchers fail to achieve data saturation

(Fusch & Ness, 2015). Semistructured interviews with SME accounting managers, direct observations of the AIS used to support product and service costing, and reviews of documentation supporting modern costing strategies served as means of data collection. I collected interviews, direct observations, and reviews of documentation until no new themes emerged and until data collection procedures yielded replications for which additional coding was unnecessary.

Population and Sampling

Purposive sampling is the intentional selection of participants yielding qualifying characteristics that will enable the researcher to ascertain the data necessary to better understand phenomena (Hagaman & Wutich, 2017; Marshall & Rossman, 2016; Palinkas et al., 2015), thereby deriving an answer to the research question. Snowball sampling utilizes a chaining technique stemming from previous data collections efforts to locate new sources of rich information (Marshall & Rossman, 2016). Through purposive sampling, I selected seven participants who manage the accounting function for their organization in operation for at least 5 years in New Hampshire, who had at least 3 years of experience in an MA role, and who used modern costing strategies to improve profitability. Malterud, Siersma, and Guassora (2016) stated that a purposive sample size of six to ten participants can provide a satisfactory level of information power in qualitative research.

No set standards exist for sample sizes in qualitative research (Malterud et al., 2016). Choosing a sample size of at least two cases may increase the credibility of the study's findings and allow for a more powerful analytic conclusion (Yin, 2018).

Precedence can be a contributing factor in the choice of sample size depending upon the type of analysis chosen (Palinkas et al., 2015); however, data saturation is the main underlying factor of sample size considerations in qualitative studies (Malterud et al., 2016; Palinkas et al., 2015). To ensure data saturation, I continued to conduct semistructured interviews, direct observations, and reviews of documentation until replications of data collection occurred and until there was no longer a need for additional coding. By continuing to collect data until replications of data occur and additional coding is unnecessary, researchers can improve the quality of research and support data saturation (Fusch & Ness, 2015).

Semistructured interviews are a standard method for conducting in-depth qualitative research within the case study design permitting the attainment of data saturation (Marshall & Rossman, 2016; Nascimento et al., 2018; Yin, 2018). I conducted face-to-face semistructured interviews with seven participants who manage the accounting function for their organization in operation for at least 5 years in New Hampshire, who had at least 3 years of experience in an MA role, and who used modern costing strategies to improve profitability. The interview setting was the participants' place of business so that the setting was comfortable and convenient for the participants. The interview took place in a conference room or office within the participants' place of business to ensure both the privacy and confidentiality of the participant and the safety of the researcher.

The use of a comfortable and convenient setting for participants supports a working relationship and enables the dissemination of meaningful, quality information

(Li et al., 2016). An interview setting of the participants' place of business best supported the use of direct observations of the AIS used to support product and service costing and reviews of documentation supporting modern costing strategies, as it provided for extended periods of contact with participants and the organizational environment. Extended periods of interaction between the researcher and the research setting allows for a greater understanding of the phenomena (Anney, 2014).

Participants responded to eight open-ended interview questions, each of which supported the overarching research question. Each interview lasted between 60 to 90 minutes and I recorded each interview after receiving the informed consent of the participant by e-mail or in person. In the informed consent form, permission was requested to record the interview using two digital recording devices to aid transcription. Before beginning the interview at the participant's place of business, I requested participants reaffirm verbally their permission to record the interview using two digital recording devices. I supplemented the data collection process through the use of field notes to corroborate the audio recordings, the performance of direct observations of the AIS used to support product and service costing, and the review of documentation supporting modern costing strategies to validate the data collected during the semistructured interview process.

Ethical Research

Informed Consent

Research involving human subjects requires careful consideration of ethical practices (Yin, 2018), including measures taken to protect participants' privacy (Zahle,

2017). Informed consent constitutes the agreement of participants to be part of a study (Marshall & Rossman, 2016; Yin, 2018; Zahle, 2017). Upon receipt of the Institutional Review Board (IRB) approval and in conjunction with IRB guidelines, I sent e-mails to potential participants explaining the study and included the informed consent form.

Participants should be made aware of any potential risks or benefits that may result from participating in the study (Zahle, 2017), and informed as to how the researcher plans to keep them safe from harm (Yin, 2018). Participants should be deemed competent, should understand the research and its objectives, and should be free to decide whether to take part; otherwise, the consent is deemed invalid (Marshall & Rossman, 2016; Zahle, 2017). I e-mailed all participants a copy of the informed consent form prior to the interview appointment and also brought with me to the interview a paper copy of the informed consent form. I verbally reviewed the informed consent form with participants prior to the interview, and participants signed either the printed informed consent form from their e-mail, or used the paper copy that I furnished returning it to me prior to commencement of the interview.

Withdrawal Procedures and Participation Incentive

Participants should be made aware that they are under no pressure to participate in the study and that they may withdraw from the study at any time without adverse implications (Zahle, 2017). At the beginning of the interview process, I informed participants of their right to terminate the interview at any time without worry about adverse reactions. The distribution of personal contact information for myself (both phone and e-mail) took place at the scheduling of the interview so that participants could

withdraw from the interview. Any request to withdraw from the study would have meant the removal and destruction of all data collected from that participant, though I received no requests to withdraw from the study. Participants did not receive an incentive to participate, nor did they receive remuneration. Participants received an e-mail “thank you” note acknowledging and appreciating their participation in this process. When the study is published, I will e-mail each participant with a summary of the findings.

Ethical Protection Measures

Morals underlie ethical research practice, and as outlined in the *Belmont Report*, researchers should convey their adherence to the principles of respect for persons, beneficence, and justice (Marshall & Rossman, 2016; Ross et al., 2018). Researchers should communicate how their adherence to these principles underlies the measures they take to protect the individual rights of participants (Ross et al., 2018). Researchers hold the responsibility of ensuring that no harm befalls participants from their involvement in the study (Marshall & Rossman, 2016; Ross et al., 2018; Yin, 2018).

I adhered to high ethical and moral standards during the research and data collection process by showing respect to participants by listening attentively, using non-verbal communication to enhance the conversation, and by carefully choosing words that did not offend, confuse, or lead the participant in any way. Maintaining a professional relationship with participants ensured appropriate distance and objectivity in the role of a researcher, making sure that all questions related directly to the research study and that no questions were out of context or of a personal nature.

Data Protection and Confidentiality

Safeguarding the confidential nature of participants' names and their organizations is of utmost importance, and it is the responsibility of the researcher to uphold participant privacy (Marshall & Rossman, 2016; Yin, 2018). Zahle (2017) stressed the need for measures to adequately protect the situational and informational privacy of participants. The information collected for this study contained no personal information that permitted the identification of participants or their organizations, thereby ensuring participant privacy. Researchers should address issues of privacy at both the case level, and the individual participant level as the goal of privacy is to protect both participants and their organizations (Yin, 2018). Researchers should remove all identifying information from their collected data and use identifiers to protect the identity of participants (Zahle, 2017). I used identifiers P1, P2, P3... to identify individuals within each case to anonymize the data protecting participants' identities.

To keep the names of organizations and participants confidential, all consent forms, interview transcripts, field notes, company documentation, and other support material are kept in a locked personal safe for a minimum of 5 years at which time shredding of all printed materials will occur. All electronic communications and information are kept on a password-protected, cloud-based storage platform and backed up on a Lexar USB portable drive for the same 5-year minimum period at which time permanent deletion of all electronic records associated with this study and reformatting of the Lexar USB portable drive. The IRB approval number for this study was 08-07-19-0666387.

Data Collection Instruments

A widely-used method for data collection in qualitative research is interviews (Castillo-Montoya, 2016). Researchers' use of semistructured interviews follows a script of questions asked in a sequence (Nascimento et al., 2018), sometimes within the context of an interview protocol (Castillo-Montoya, 2016). For case studies, the use of the semistructured interview is common (Yin, 2018). Within a semistructured interview process, the researcher is the primary data collection instrument as it is the job of the researcher to interpret the data collected and derive meaning (Maguire & Delahunt, 2017). Enosh and Ben-Ari (2016) discussed reflexivity as the state of moving into and out of a phenomenon saying that the interview process consists of three points of reflexivity (a) the researcher, (b) the participant, and (c) the encounter. The interview encounter should allow for the mutual reflection between the participant and the researcher (Enosh & Ben-Ari, 2016), but at the same time, reflexivity should not unknowingly influence the researcher's track of questioning (Yin, 2018). I conducted semistructured interviews within the context of a multiple case study and was the primary data collection instrument in this process. I used reflexivity to recognize the use of modern costing strategies when described by participants, but not initially identified by name.

Researchers can access participants' expertise using interviewing to effectively capture the knowledge and skills necessary to solve problems (van de Wiel, 2017). At their place of business, I interviewed seven participants who manage the accounting function for their organization in operation for at least 5 years in New Hampshire, who

had at least 3 years of experience in an MA role, and who used modern costing strategies to improve profitability. The semistructured interview format contained eight open-ended interview questions that aligned with the research question. All interviews entailed the use of an interview protocol (see Appendix A). An interview protocol enhances the quality of data captured during the interview process (Castillo-Montoya, 2016; Yeong, Ismail, Ismail, & Hamzah, 2018).

Validating one source of data collection such as interviews with other sources such as direct observation and review of archival records strengthens the reliability and credibility of the data and serves to triangulate sources of data (Marshall & Rossman, 2016; Yin, 2018). Direct observations served as a means of triangulating the data collected by interviews. Direct observations permit the researcher to gain insight into the phenomena's overall context (Alpi & Evans, 2019; Cypress, 2017; Yin, 2018). Direct observations of the AIS used to support product and service costing corroborated the data collected by the interviews of participants. After receiving consent from each participant, reviews of documentation including archived cost reports, schedules of rates, fees, and charges, quality metric data, and industry-specific case studies used by participants as models for costing strategies served as another data collection instrument and provided a means of further corroborating the interview data.

To enhance the reliability and validity of the interview process, I used member checking. The use of member checking provides participants the opportunity to confirm the accuracy of the researcher's findings which adds credibility to the data collected and ensures that the researcher has accurately captured the participant's points of view (Birt

et al., 2016; Madill & Sullivan, 2018; Marshall & Rossman, 2016). Member checking also allows participants the opportunity to question the researcher's findings and interpretations while simultaneously identifying any inconsistencies in the research (Madill & Sullivan, 2018). All participants within this study had the opportunity to member check data collected by reviewing a representation of the findings to confirm its validity and authenticity. Member checking occurred by e-mailing participants a copy of my interpretation of their responses and asking them to confirm the accuracy by responding by e-mail within one week. I made arrangements for member checking in person at the end of each semistructured interview.

Data Collection Technique

The primary technique used for data collection was face-to-face semistructured interviews at participants' place of business. Semistructured interviews are prevalent in qualitative research as they permit the collection of in-depth data and can lead to the point of data saturation (Alpi & Evans, 2019; Castillo-Montoya, 2016; Nascimento et al., 2018). The interview technique, as a source of evidence, offers the advantage of allowing for direct, targeted questions that focus on the study's topic (Yin, 2018). The benefits of the interview technique are that it can allow the researcher to gain insights not able to be gleaned from other methods such as participants' impressions and perceptions of the issue (Yin, 2018). Bias associated with interview questions and responses, along with inaccurate transcriptions and reflexivity associated with the interview process, are disadvantages of interviews that researchers should take steps to mitigate if employing this technique for data collection (Yin, 2018).

Semistructured interviews usually follow a predefined script (Marshall & Rossman, 2016; Nascimento et al., 2018; Yin, 2018), and often take the form of an interview protocol (Castillo-Montoya, 2016). Researchers use an interview protocol because of its ability to strengthen the quality and consistency of data captured during the interview process (Castillo-Montoya, 2016; Yeong et al., 2018). At the physical location of the business, I used an interview protocol to assist me in interviewing seven participants at organizations in operation for at least 5 years in New Hampshire, who had at least 3 years of experience in an MA role, and who used modern costing strategies to improve profitability (see Appendix A). Interviewing participants at their place of business established a setting that was comfortable and convenient for them, and best supported direct observations of the AIS used to support product and service costing, and the reviews of documentation supporting modern costing strategies.

At the point of the e-mailed invitation to participate in the case study, prospective participants received an informed consent form and a request for an interview of 45 to 60 minutes. In the informed consent form, I requested permission to record the interview using two digital recording devices. Upon receipt of a signed consent form, an e-mail was sent to participants containing the interview questions and a request for a mutually agreeable time to meet at the participant's place of business. Upon arrival at the participant's place of business, I verbally reviewed the consent form and requested participants to reaffirm verbally their permission to record the interview using two digital recording devices. Upon conclusion of the interview, a verbal arrangement for member checking to occur by e-mail transpired including a request for participants to respond by

e-mail within one week. Member checking enhances the credibility of the interview and serves to confirm the researcher's interpretation of participants' responses, whereby participants view the researcher's summary of the discussion to ensure it accurately captured the participants' points of view (Birt et al., 2016; Madill & Sullivan, 2018; Marshall & Rossman, 2016).

Data Organization Techniques

In identifying the principles of data collection, Yin (2018) stressed the need for a case study database. The importance of the case study database lies in the separation of raw case study data (sources of evidence) from the researcher's case study report containing the researcher's interpretations (Yin, 2018). Yin (2018) and Belotto (2018) suggested using a computer-assisted qualitative data analysis software (CAQDAS) or software programs such as Microsoft Word (Word) or Microsoft Excel (Excel) for database creation to increase the reliability of the case study. Marshall and Rossman (2016) suggested the logging of data by dates and times and the importance of actively reviewing data regularly. I used a case study database to keep data including signed informed consent forms, audio recording files, transcriptions, field notes, and reflexive journals separate from any organizational documentation and external archival data obtained either electronically or by hard copy in the case study process. Each case study within this multiple case study had separate storage files within the case study database and I segregated each organization's data into individual data packages. I logged files within the case study database by date and time weekly during the data collection process.

Reflexive journals are a way to keep track of data and understandings as they emerge while simultaneously permitting the researcher the ability to self-reflect (Cypress, 2017). Using reflexive journals to record self-examinations regularly can assist researchers in being mindful of their role in the research process (Cypress, 2017). A reflexive journal also enables the researcher to chronicle methodological decisions in conjunction with their values and interests, permitting ongoing reflection during the research process (Lincoln & Guba, 1985). I used a reflexive journal regularly throughout the research process to keep track of data and understandings as they emerged and to self-reflect about the role of the researcher in the process. After each case study site visit, I made an entry in the reflexive journal to reflect on the setting and overview of the interview, observations made, reviews of documentation, my personal values and interest in relation to the case, and reflections about initial coding and themes.

Cloud-based storage is a popular option for individuals and organizations as it reduces storage costs and permits a flexible and convenient means of data retrieval (Cao, Fu, & Sun, 2016). To organize and safeguard the data collected and used in this study, I used Microsoft One Drive, a password-protected, cloud-based, filing and storage system. Back-up of that cloud-based storage system happened using a password-protected Lexar USB storage device stored in a locked personal safe within my home. Researchers should take the necessary precautions to ensure that stored data is secure and protected from unauthorized access (Zahle, 2017). All data are kept in a secured and locked setting for 5 years, at which time the destruction of all materials through the shredding of any

printed materials, the permanent deletion of all electronic files, and the reformatting of any external memory devices will occur.

Data Analysis

I used methodological triangulation to support the identification of themes across the semistructured interviews conducted with participants, the direct observations made of SMEs' AISs, and the reviews of documentation supporting modern costing strategies. The use of methodological triangulation allows researchers to study phenomena from more than one perspective allowing for a greater depth of understanding (Alpi & Evans, 2019; Joslin & Muller, 2016; Madill & Sullivan, 2018). Using multiple sources for data collection supports a higher level of validity (Abdalla et al., 2018; Birt et al., 2016; Marshall & Rossman, 2016).

I organized data using Word and Excel and manual coding using tables and highlighting. Manual coding methods such as colored pencils, highlighting, and using tracked changes with comments in Word (Belotto, 2018), along with the use of colored pens, paper, and sticky notes (Maher, Hadfield, Hutchings, & de Eyto, 2018), are traditional means of identifying codes and extracting themes used in the data analysis process. To enhance two rounds of manual analysis using Word and Excel, I used NVivo 12 Plus software. I entered into the NVivo 12 Plus program codes derived from the manual coding and analysis, along with a minimal number of new codes identified during the NVivo Plus process, yielding a total of 61 codes. CAQDAS such as NVivo 12 Plus aids researchers in analyzing the data collected by helping to categorize and code (Yin,

2018), while at the same time providing a means for managing the data and retrieving it as needed (Maher et al., 2018).

I coded the data at the individual case level three times, twice manually using Word and Excel and once using NVivo 12 Plus. Researchers create codes to translate data through interpreted meaning (Saldana, 2016). I analyzed data with the addition of each new case study and once the collection of all case study data were complete. Researchers should work with the data they collect by analyzing it from different perspectives and using different tools and resources to work with the data in different ways (Yin, 2018), essentially taking the time necessary to interact with the data regularly (Maher et al., 2018).

Thematic analysis involves a layering approach meaning the analysis of initial data happens, researchers gather new data, analysis of the new data takes place, and comparison and synthesis (where appropriate) to the existing data occurs, thereby enabling a comparative analysis approach (Maguire & Delahunt, 2017; Percy, Kostere, & Kostere, 2015). The goal of thematic analysis is the identification of patterns, the derivation of themes from those patterns, and the connection of those themes back to the research question (Maguire & Delahunt, 2017). Percy et al. (2015) put forth a thirteen-step process for conducting thematic analysis summarized by (a) reviewing the data collected highlighting any units of data that appear meaningful, (b) going back and reviewing those highlighted passages separating out those passages that relate to the research question from those that do not, (c) coding the data and grouping that which relates to identify patterns, (d) continuing this process adding new data and layering and

reviewing the data to identify patterns for theme alignment, and (e) developing the themes and analyzing their support of the overarching research question.

I aligned my analysis with the thematic analysis process put forth by Percy et al. (2015). Subsequent to each site visit, I reviewed all data including the interview transcripts, observation protocols (see Appendix C), and notes from the review of documentation (or actual documentation) highlighting any meaningful data at an individual case level. I reviewed those highlighted items and identified those which aligned with the research question by coding them. I analyzed each individual case three times (two times manually using Word and Excel, and once using NVivo 12 Plus software), each separated by at least one week of time. Subsequent coding and analysis occurred with the addition of each new case. Consolidation and organization of codes into patterns, categories, and themes was ongoing occurring first manually within Excel, with the derivation of final themes confirmed using NVivo 12 Plus. Following the steps outlined in Percy et al.'s (2015) thematic analysis process, key themes emerged from the data collected that supported the research question.

The prioritization of cost management using target and life-cycle costing strategies emerged as a theme which aligns with the work of Sharafoddin (2016) who found that target costing was a primary means for effective cost management and Knauer and Moslang (2018) who found that improved cost management was one of the greatest benefits of life-cycle costing implementation for organizations. A focus on continuous improvement and efficiencies via lean strategies emerged as a theme that stands in contrast to the work of Legaspi (2018) who found that modern MAPs such as kaizen

costing and lean costing had little use in SMEs. Quality costing and ABC use in response to external environmental contingencies emerged as a theme which disconfirms the work of Armitage et al. (2016) who found that quality costing strategies were rarely used by SMEs, but confirms the work of Pickering (2018) who suggested that small business accounting managers carefully analyze the cost-benefit trade-off of implementing ABC.

Reliability and Validity

From the subjective nature of qualitative research, measures taken to ensure that research is reliable and valid require adequate disclosure. The measures taken to ensure reliability and validity should occur during the research design process (Yin, 2018). Cypress (2017) contended analysis of qualitative studies should occur based on their rigor and trustworthiness. Abdalla et al. (2018) stated that the four quality dimensions of reliability, credibility, transferability, and confirmability should be present in qualitative research.

Reliability

Researchers can ensure reliability through the consistency of results with repeated attempts of some process or procedure, which supports the elimination of error and bias (Kihn & Ihantola, 2015). Researchers should proactively build measures of reliability into the design of the research study (Cypress, 2017). Lincoln and Guba (1985) made known the use of credibility, transferability, confirmability, and dependability as equal criteria for establishing validity and reliability in qualitative research.

Dependability. Dependability is the extent that the study could be repeated by other researchers and that the findings would be consistent (Lincoln & Guba, 1985).

Dependability occurs when findings are stable throughout time (Anney, 2014). Using qualitative expert researchers to review the research findings and interpretations and validate the themes derived supports dependability (Cypress, 2017; Marshall & Rossman, 2016). As a faculty member in higher education, I reviewed my research process, interpretations, and findings with a colleague who possesses a terminal degree and who has experience in case study research to confirm the derivation of themes.

Researchers can achieve dependability using an audit trail (Lincoln & Guba, 1985). An audit trail transparently chronicles how the collection, management, and interpretation of data occurred so that anyone reviewing the study could see the logic behind research design decisions and could replicate the results under comparable conditions ensuring consistency (Marshall & Rossman, 2016). To ensure dependability, I documented the research design, assumptions, limitations, and methods used in the form of an audit trail by separately storing within a multi-tabbed Excel workbook the details of the methods used throughout this research process.

In addition to the use of an audit trail, qualitative researchers can support the dependability of a study using stepwise replication and a code-recode strategy (Anney, 2014). Stepwise replication occurs when at least two researchers independently evaluate the same data collected and then compare their findings to assess consistency (Anney, 2014). A code-recode strategy involves the researcher analyzing the data collected on two different occasions separated by a period to determine whether there is consistency in their findings (Anney, 2014). As a second means of ensuring the dependability of the research results, I used a code-recode strategy by analyzing the data collected three times,

twice using Word and Excel to derive codes and themes, and once using NVivo 12 Plus software to confirm codes, revise themes, and determine the final derivation of themes. To assess the consistency of the study's findings, I separated this three-step analysis process by a minimum of a one-week period between each step thereby supporting the dependability of the study's results.

Member checking is a means by which to validate participant responses whereby participants confirm the accuracy of the researcher's interpretations thereby adding credibility to the data captured and ensuring that the researcher has accurately captured the participant's points of view (Madill & Sullivan, 2018). Member checking supported the dependability of data in this study. At the end of the interview, I made verbal arrangements to e-mail participants a copy of the interpretation of their responses along with a request for participants to confirm the accuracy by responding to the e-mail within one week.

Validity

Validity concerns the accuracy by which derivation of the interpretations and findings occurred during the research process (Cypress, 2017; Kihn & Ihantola, 2015). The justification of research design and the logic that underlies it contribute to the study's validity (Cypress, 2017). The use of member checking and triangulation contributes to the validity of a qualitative study (Marshall & Rossman, 2016). Triangulation strategies in qualitative research include the quality dimensions of credibility, transferability, and confirmability (Korstjens & Moser, 2018).

Credibility. To establish credibility, a researcher must accurately convey data collected from participants and ensure that it is interpreted correctly (Lincoln & Guba, 1985). Researchers can take various steps to ensure credibility in a study including engaging with participants for extended periods; focusing on specific, relevant aspects of the phenomenon through careful observation; using triangulation strategies; and performing member checking (Korstjens & Moser, 2018; Marshall & Rossman, 2016).

Methodological triangulation is a type of triangulation that involves the use of multiple sources of data collection to capture the same phenomenon, thereby supporting an enhanced level of validity (Abdalla et al., 2018; Birt et al., 2016; Marshall & Rossman, 2016). Studying phenomena from more than one perspective allows for a greater depth of understanding (Joslin & Muller, 2016). To support methodological triangulation, semistructured interviews of participants, direct observations of SMEs' AISs, and reviews of documentation supporting modern costing strategies were used to ensure the credibility of the study's results.

The use of member checking further supported the study's credibility. The use of member checking helps ensure that participants' voices are heard and helps the mitigation of research bias (Anney, 2014). At the end of the semistructured interview, verbal arrangements were made to e-mail participants a copy of the interpretation of their responses, requesting them to confirm the accuracy by responding to the e-mail within one week.

Transferability. A researcher can establish transferability when the ability of qualitative research results to be used in different contexts with different users is possible

(Anney, 2014). The burden of transferability falls on the researcher as they should create a defined arrangement of location, time, and participants that permits interested parties to transfer findings (Lincoln & Guba, 1985). Improvement of transferability is possible using purposive sampling, thick and rich descriptions, and strong and effective data (Anney, 2014; Cypress, 2017). To ensure that findings are not misinterpreted, researchers should ensure the documentation of the study's limitations, such as the number of organizations and individuals participating, the data collection methods, the lengths and periods of the sessions of data collection, and data analysis methods used (Abdalla et al., 2018).

The use of purposive sampling to select participants supported the transferability of this study's findings. Purposive sampling is appropriate when the point of the research is not to generalize the findings or when limitations of resources, time, and workforce are present (Hagaman & Wutich, 2017). The selection of participants for this study using purposive sampling ensured that the participants selected supported the research question.

The use of thick descriptions supported the transferability of the study's findings. A researcher provides thick descriptions by providing details about the methodology, data collection methods used, and context of the study (Anney, 2014). Using thick descriptions allows readers to judge how well the research findings transfer to other contexts supporting the replication of the findings under similar conditions (Anney, 2014). I used thick descriptions by recording details about the research processes, data collection methods used, and the context of the study to support the transferability of the study's findings.

Confirmability. Confirmability is the ability of another researcher to derive the same findings and make the same inferences (Abdalla et al., 2018; Marshall & Rossman, 2016). Researchers' assurance of confirmability concerns the notion that the study's findings are derived from the participants' experiences and ideas, not from the experiences and ideas of the researcher (Abdalla et al., 2018). The use of reflexive journals for recording regular self-examinations can help researchers be mindful of their role in the research process and can enable confirmability (Cypress, 2017). I used a reflexive journal after each case study site visit to reflect on the visit, my personal values and interest in relation to the case, and initial coding and themes.

Audit trails are another means by which researchers can chronicle their everyday thoughts and actions about the research performed (Cypress, 2017; Lincoln & Guba, 1985), thereby supporting confirmability. An audit trail transparently communicates how data was collected, managed, and interpreted so that the logic behind the research design decisions is evident to interested parties (Marshall & Rossman, 2016). The use of an audit trail in a multi-tabbed Excel workbook provided documentation of the research design, assumptions, limitations, and methods used so that my position as an objective researcher was transparent. Triangulation is also essential in ensuring confirmability as triangulation serves to effectively remove the influence of the researcher (Abdalla et al., 2018). Using the three data collection techniques of semistructured interviews of participants, direct observations of SMEs' AIS, and reviews of documentation supporting modern costing strategies, I methodologically triangulated the data to achieve confirmability.

Data saturation. Data saturation occurs when no new patterns or themes appear from additional research (Hancock, Amankwaa, Revell, & Mueller, 2016; Nascimento et al., 2018; Weller et al., 2018). To achieve data saturation, the semistructured interview process, direct observations of SMEs' AISs, and reviews of documentation were used in this study. Member checking provided another means of confirming data saturation. While member checking serves to validate participants' responses (Birt et al., 2016), it also permits participants to check the accuracy of the data collected to ensure that it aligns with the participants' experiences (Birt et al., 2016). Through member checking, researchers can be confident that the derivation of all underlying themes from the data occurs (Cypress, 2017), thereby supporting data saturation.

Transition and Summary

Section 2 addressed the purpose of the study, the role of the researcher and the study's participants. Also discussed in Section 2 was the research method and design, population and sampling, ethical research, data collection instruments, data collection technique, data organization, data analysis, and reliability and validity. Section 3 addresses the study's findings, the application to professional practice, the implications for social change, the recommendations for future study and the conclusion.

Section 3: Application to Professional Practice and Implications for Change

Introduction

The purpose of this qualitative multiple case study was to explore the modern costing strategies SME accounting managers use to improve profitability. Seven SME owners, CFOs, and administrators who manage the accounting function at their organization operating in New Hampshire participated in the study. Table 1 summarizes the role of participants.

Table 1

Role of Participants

	SME owner	CFO	Administrator
Case 1	X		
Case 2		X	
Case 3			X
Case 4	X		
Case 5	X		
Case 6		X	
Case 7	X		
Total	4	2	1

Participants responded to eight open-ended interview questions that supported the research question and provided the foundation for the research findings. To triangulate data findings, I collected and analyzed data from the following sources: semistructured interviews of participants, direct observations of SMEs' AISs, and reviews of documentation supporting modern costing strategies.

Five themes emerged from the data collected. Target costing and life-cycle costing emerged as strategies by which participants managed costs. Lean practices

emerged as a strategy supporting continuous improvement and efficiencies. Quality costing and ABC emerged in response to external environmental contingencies. The identification of systems and technology in support of modern costing strategies and organizational attributes as factors in firms' choice of modern costing strategies emerged as the final two themes. The emergence of these themes provide support for Otley's (1980) CT as applicable to MA and underscored that no one universally appropriate accounting system exists and that organizations' accounting systems depend upon management's response to environmental contingencies.

Presentation of the Findings

The overarching research question for this study was, What modern costing strategies do SME accounting managers use to improve profitability? To support this overarching research question, I used eight open-ended interview questions (see Appendix A). I used generic identifiers such as P1, P2, P3, and so forth to maintain participants' privacy and confidentiality. Five major themes emerged from thematic analysis. These themes were (a) the prioritization of cost management using target and life-cycle costing, (b) a focus on continuous improvement and efficiencies via lean strategies, (c) quality costing and ABC use in response to external environmental contingencies, (d) systems and technology in support of modern costing strategies, and (e) organizational attributes as factors in modern costing strategy use.

Theme 1: The Prioritization of Cost Management Using Target and Life-Cycle Costing

Connections to the literature. The first theme identified was the prioritization of cost management using target and life-cycle costing strategies. Target costing emerged as a primary strategy by which participants prioritized cost management to improve profitability. This finding aligns with those of Sharafoddin (2016) who found that target costing was a primary means for effective cost management. The use of target costing was prevalent in five of the seven cases in this study. This finding disconfirms the findings of previous studies. Legaspi (2018) found that target costing had little use in SMEs, though some SME accounting managers found target costing useful as a planning tool to respond to customer demands. Alzoubi (2018) found only moderate use (medium degree of agreement on a low, medium, high scale) of target costing in SMEs. In contrast to Alzoubi's (2018) and Legaspi's (2018) findings, target costing strategies were present in over 70% of cases in this study.

Goncalves et al. (2018) found that a product cost control focus versus a product development cost focus made an impact on firms' decision to use target costing. The findings from this study are consistent with Goncalves et al.'s findings. A focus on product development costs formed the basis of participants' decision to use target costing strategies as participants made strategic decisions about which raw materials to use, identified minimum batch sizes, and only manufactured products for which they felt they could compete in the market. These findings are in alignment with those of Contuk (2018) who found that accounting managers drive costs to optimal levels by using target

costing systems in the product development stage and of Ahn et al. (2018) who found that among other characteristics, early cost management was an underlying factor in target costing practices. A built-in market-driven concept underlies target costing strategies and enables firms to determine the right price and cost, which decreases the risk of inadequate profit (Baharudin & Jusoh, 2019). Participants confirmed the work of Baharudin and Jusoh (2019) indicating that the targeted manufacturing cost, the likelihood of unit production, and the competitiveness of the product depended on the market in which they planned to compete.

The use of life-cycle costing strategies as a means of cost management and improved profitability occurred in limited contexts, found within only three case studies. Participants used life-cycle costing to better capture all the costs associated with a product's life-cycle including those relating to research and development, which were not captured in direct product costs. This finding confirms those of Knauer and Moslang (2018) who found that firms with more substantial research and development costs have an increased likelihood to use life-cycle costing.

Participants used life-cycle costing to improve profitability primarily by capturing preproduction costs previously not incorporated into product costs, but in one case, the inclusion of postproduction, support costs was evident. The findings of this study confirmed those of Uyar (2019) who found that SME accounting managers' use of life-cycle costing strategies improves business performance and those of Knauer and Moslang (2018) who found that improved cost management was one of the greatest benefits of life-cycle costing implementation for organizations.

Presentation of data collected. Participants focused on cost management strategies such as the use of alternative inputs in production, the management of volatile raw materials pricing, and the adoption of optimal batch sizes to target cost products for improved profitability. P4 said, “We help [customers] understand what the market demand is, so sometimes a clean ingredient will get you the same kind of target market as an organic, but be much cheaper.” P4 stressed the importance of “know[ing] what the target time is” prior to beginning production to help manage the product cost so that it is competitive in the market. A review of a documented production log in Excel confirmed the use of targeted batch times.

The fluid nature of raw materials costs impacted participants’ cost management strategies. P4 stated that the “ingredients category takes the most time [to calculate] because of the volatility of prices, nothing stays the same,” making it a challenge to manage costs. P4 elaborated, discussing the creation and use of a “robust... Excel spreadsheet” to better account for ongoing changes in raw materials costs. P4 gave the example of one raw material that “can go from \$27 for 20 pounds to \$169 depending on the time of year... that might be 50% of the profit margin on that product if we didn’t catch that.” Observation of an Excel-based product costing configurator confirmed its ability to automatically update product costs in the bill of materials when changes to raw material input prices occurred.

The use of minimum batch sizes in preproduction planning supported targeted costs and improved profitability. P5 said, “We don’t make less than an [industry-specific unit of measure] because it’s not worth the time, it’s going to cost [the customer] more

money, plus the [industry-specific equipment] doesn't work well only half full." An observation of cost calculations by batch size in an Excel file showed the significant decrease in unit cost associated with larger batch sizes confirming the impact of minimum batch sizes on targeted costs. P7 discussed the analysis of production records and the discovery that "there are some [products] that we [were] making every single day... so then we incorporated... minimum make quantities." P7 elaborated on the use of minimum make quantities by stating that they developed a "fill-to-log ratio" to measure the effectiveness of these costing strategies. In continuing to discuss cost management, P7 said: "we bring [employees] in and talk to them about supplies and ordering supplies and the importance of reducing overnight freight charges and the establishment of minimum make quantities."

Participants acknowledged making the difficult decision not to produce some products because input costs would have been too high, negatively impacting profitability. P5 discussed not producing certain products because they are "labor-intensive" and P4 underscored a similar point saying that certain products "that require [additional] processing... those are not our strong suits." P4 continued, stating that on some products, "that cost per unit, we just can't produce enough in the time frame to make it cost-effective and competitive," so they choose not to partake in that type of production. P7 said that they consider new product requests by researching the market pricing for the product, "we look at what's the going rate for that... we find out what that is and we... back into it."

In deciding whether to accept a production job, P4 stated that when they assess whether to take on a new production job, they check their manufacturing cost by “run[ning] it through this little margin calculator that we have” and creating “price tiers” for wholesale, distributor, and retail. P4 continued, “If we think the price is high, we’ll run through that and say... no, that’s fine... it’s not out of the market.” An observation of an Excel-based margin calculator confirmed the use of tiered pricing levels for distributors, wholesalers, and retailers.

Participants indicated that the market in which they plan to compete ultimately determines the targeted manufacturing cost, whether that product will be produced, if the product will be competitive in the market, and what the overall profitability will be. P5 stressed the importance of customer type and the market where products will be sold in determining targeted manufacturing costs using the example of manufacturing product to be sold at a specialty store versus manufacturing product to be sold at a specific chain store saying:

We get people that come through the door that want to...their goal is...I want to get into [specific chain store]. We tell them [specific chain store] is a fine goal; however, an [industry-specific] store is not the same as a specialty store and if you have a unique product that is inherently going to be more expensive, the [industry-specific] store may not be your best arena because their price points are much lower.

Illustrating the influence of the market on target cost and profitability, P1 discussed the elimination of a “global reseller” and the choice to “[go] direct to some of

their customers” as impactful cost management strategies. P1 said these strategies enabled them to “pick up a lot of margin” and begin “supplying direct to some of their customers-worldwide and so from a target perspective, we’re flanking our competitors in a big way.” A review of documented pricing on the participant organization’s website confirmed the competitive price point of its products compared with the industry.

Cost management through the use of target costing emerged as a response to market pricing. P1 discussed how “as a small business, you’re kind of pushed around a little bit by the market, so I am less setting prices in the market than responding to market pressure.” P4 and P5 both discussed continually being aware of market pricing. P4 confirmed that “we keep an eye on general prices of categories of products that we make to have a sense of where they are,” and P5 said “we kind of keep an eye on things wherever we go” in terms of having a sense of the types of products in which they can compete and realize profit.

Within the service-based, healthcare industry, the use of target costing enhances the derivation of cost at the patient level. P6 stated that the healthcare industry-specific need to “attribut[e] cost in totality for one person” was a “great example of... target costing” and that it is a modern approach to costing because “we’ve never looked at costs that way.” P6 indicated their organization’s participation in an accountable care organization (ACO) was new stating,

The reason that I think that’s modern is because, for healthcare, ...you’re looking at total cost of care for a patient, and then we as an organization have to look at

our costs and what our costs are being attributed to that care and then trying to find ways to overall mitigate the cost for the beneficiary, for the patient overall. A review of a partner hospital's website documentation detailing the ACO's membership, mission, and vision, and total beneficiaries served confirmed the interview data collected.

Technology was a contingent factor in the use of target costing according to P6 who said, "We relied on technology, a new technology for that. Brand new technology." P6 stated that an investment in technology created by Premier, a group purchasing organization (GPO) permitted them to perform "cost analysis and tell us what's going on with those patient beneficiaries" supporting the management of the "total cost of care for a patient." A review of documentation from the PremierConnect website confirmed its stature as the largest clinical database in the industry and its ability to provide useful clinical, financial, and operational data to generate insights for its members.

Life-cycle costing emerged as a secondary strategy by which some participants managed costs. Participants described the use of what was identified as life-cycle costing strategies as a means of cost management and improved profitability. Manufacturing a line of products dependent heavily on research and development as preproduction costs, P7 described the process of implementing new costing strategies saying, "the human cost is by far the greatest expense that we have for what we do" and the realization that "we can't just go on margin" when referring to using only raw materials input costs.

In response to decreased demand and not being "at a point where we are as busy as we were revenue-wise," P7 said that determining "what it costs to dispense something" became an important method of cost management. P7 elaborated, "We can't just have

cost [be] a function of cost of goods” and explained the decision to move forward with a “cost to dispense” the product to the customer. P7 stressed, “we have to know that cost and that’s something a lot of my peers don’t know.” P7 described the process of taking a “retrospective look at how much is it costing” and using “an 18-month span” of “numbers to get a good solid look at what... it costs to dispense something.” An observation of the process by which the participant calculated the total cost to dispense showed the inclusion of research and development costs in the form of salaries in the total cost to dispense calculation.

Life-cycle costing strategies emerged as a way of managing costs through improved customer profitability. P4 stressed the fact that it was challenging to account for “all the time spent doing the price check and doing the initial sourcing and all that” and that one of the contingencies involved in adopting full life-cycle costing was “how to do that without pricing ourselves and pushing customers out.” P4 stated that they now “charge customers for [raw material] sourcing as a service” due to the significant cost associated with this phase of the products’ life-cycle. A review of documentation showed a list of provided business services that included raw materials sourcing with a corresponding hourly rate.

Connections to the conceptual framework. As confirmed by the findings of this study, the CT of MA underscored participants’ use of target and life-cycle costing for cost management. The CT as applicable to MA put forth by Otley (1980) focused on the need for organizations to match their accounting systems to their circumstances or contingencies. Investments in technology and the limited resource of time to better

analyze costs were contingencies that impacted the use of modern costing strategies in SMEs. These findings confirm those of Goncalves et al. (2018) who found that the availability of technology impacted firms' use of target costing strategies. These findings also confirm those of Shields and Shelleman (2016) and Jerman (2017) who found an increased return on investment for micro SMEs that spent the necessary time and money associated with analyzing customer profitability.

Theme 2: A Focus on Continuous Improvement and Efficiencies via Lean Strategies

Connections to the literature. The second theme identified was a focus on continuous improvement and efficiencies. Continuous improvement and efficiencies were present as a theme in all seven case studies. Lean strategies emerged as a primary means by which participants supported continuous improvement and profitability within their SMEs. These findings disconfirm the findings of previous studies. Legaspi (2018) found that modern MAPs such as kaizen costing and lean costing had little use in SMEs and that kaizen costing and lean costing were not used in SMEs because owners were unaware of the practice or because accounting managers did not feel they had adequate knowledge to implement them.

A sudden decrease in demand within an industry forced one participant to adopt lean practices as a means of finding efficiencies. The findings of this study confirm those of Ismail et al. (2018) who found that SMEs experiencing increased levels of market competition adopted lean practices and used MAS information and that the use of MAS information mediated the impact of lean practices on business profitability. A focus on improved efficiencies with the goal of maintaining current customer pricing was the

motivation for some participants to adopt lean strategies and business process improvement.

Participants noted that employee participation in value stream mapping and business process improvement helped to establish a culture and mindset of continuous improvement. The findings of this study confirm those of Kumar et al. (2018) who found that value stream mapping allowed every individual within an organization the chance to participate in the achievement of improved quality and reduced cost. The findings of this study also confirm those of Kumar et al. (2018) who found that using value stream mapping in conjunction with lean strategies and kaizen costing was an effective means of reducing inefficiencies within organizations, and those of Hallavo et al. (2018) who supported the evolution of lean practices into a philosophy of management.

Time as a limited resource impacted organizations' use of lean practices and value stream initiatives. This finding confirms those of Hallavo et al. (2018) who stated that time is a crucial contingency impacting the successful implementation of lean strategies. Within the healthcare industry, the influence of government spending necessitated cost transparency at an individual patient level, but at a significant expense to hospitals. This finding aligns with those of Sari, Rotter, Goodridge, Harrison, and Kinsman (2017) who stated that policymakers must be cognizant of the significant human and financial costs associated with the implementation of lean strategies within healthcare systems and whether these strategies result in the desired outcomes.

Presentation of data collected. Participants used lean practices to support continuous improvement and the reduction of costs. In their intention to reduce overhead

costs, P1 said, "It's ridiculous to try and find space for this business, cost-wise, so let's improve the space we've got" when discussing their partnership with New Hampshire Manufacturing Extension Partnership as a means of continuous improvement. P1 continued, "We have retained [New Hampshire Manufacturing Extension Partnership] to provide a workflow assessment so we can improve our layout, space utilization, and efficiency." A review of website documentation from the New Hampshire Manufacturing Extension Partnership confirmed their focus on lean manufacturing training and ISO 9001 training and certification.

Organizations engaged in business process improvement and lean strategies for the purposes of eliminating waste, finding efficiencies and reducing costs to improve profitability. P2 said "the other [costing strategy] that we're currently doing is...we call it lean, but it's... value stream business process improvement." P2 continued saying:

Every process that [the cross-functional team] chose... cross different business units so that we can look at the flow of that process throughout the units and say are there disconnects, are there redundancies, are people doing something here that's also being done over in this business unit? Why? How can we automate that? How can we make that better?

The use of lean costing strategies was evident in the healthcare industry. P6 cited the use of a healthcare-specific cost report as a widely used method for costing within their industry. According to P6, using the cost report enables the allocation of charges and expenses across "all your costing categories" leading to the calculation of a "somewhat reasonable cost-to-charge ratio." P6 stated that using the cost report is the

closest means of deriving a “cost per patient”, but “unless you can really get to the activity, [you] will never be able to truly allocate an expense per patient and know what the costs were for that procedure or that test” because the cost report is “looking at it too globally.” Because of the inability of the cost report to get to the individual patient or activity level, P6 said, “the cost report is more like lean costing.” A review of documentation from an archived cost report for this organization confirmed the computation of the ratio of costs to charges and the allocation of costs at the service line level, but not at an individual patient level.

Participants discussed a desire to not increase workforce costs as the main contingency in the use of lean strategies. While P2 discussed the need to do more without having to hire as a main contingency in the use of “the lean and the value streaming,” P7 shared the desire to not hire as the main reason for “that lean model” saying, “I’m going to hear all the time, we need more help, we need more help, we need more help, but... salary is a function of revenue, it’s got to fit. So... if it’s not fitting, where are the inefficiencies?” P2 discussed the use of lean strategies and value stream mapping as organizational effectiveness goals within their balanced scorecard saying, “it was part of our strategic plan is what made us implement value streaming.” In discussing the identification of inefficiencies P2 said,

It was more about finding efficiencies that was the contingency because there’s a lot we want to do... without having to increase our staff level. We don’t want our [customers] to have to continue to pay for more staffing if we can find efficiencies.

Elaborating on contingencies impacting the use of lean strategies, P2 said that, “one of the contingencies throughout the organization for value streaming is the cross-functional impact.” P2 continued saying that when choosing which process to map for value stream initiatives, “we really tried to focus on... processes that had touchpoints in other business units, because... that’s where... you can find the most bang for your buck.” P2 stressed the need to create value for customers as a contingent factor in the implementation of value stream initiatives, saying, “we want to make it like a member wow, hopefully, what it does is it shows we can do something better for our members, but we also do something better for ourselves as employees.”

P2 noted that the limited resource of time was a contingent factor in the implementation of value stream initiatives stating that, “what we have to be cognizant of is that it is a time resource, it takes time.” Because of the time commitment associated with the value stream process, P2 stated, “We’re paying attention to the time constraint it has on our employees who are participating in these. Right now we’re only doing five a year.”

While P2 indicated that lean strategies were proactively pursued as part of their long-term strategic vision, P7 shared the implementation of a “lean model” was a reactive approach to the contingency of a sudden economic downturn within their industry. P7 stated, “The market crashed of our industry, we had insurance companies stop coverage completely of what we do.” P7 continued, saying they experienced “a 20%, 25% drop in business from 2014 to 2016, so we had a huge shrinkage, in fact, many of peers didn’t

make it.” In reaction to those market contingencies, P7 described how they “tightened things up and really looked at efficiencies.”

Connections to the conceptual framework. As confirmed by the findings of this study, the CT of MA underscored participants’ use of lean practices for continuous improvement. The CT as applicable to MA suggests that SME accounting managers will match their costing strategies to their specific circumstances or contingencies to improve performance (Otley, 2016; San et al., 2018). The findings of this study indicated that internal strategy and time constraints were contingencies impacting the use of modern costing strategies within SMEs. These findings do not completely align with the literature, as Hallavo et al. (2018) found that makeup of firm ownership and the business cycle phase affected the use of lean costing, but that the use of lean costing was effective over time.

Theme 3: Quality Costing and Activity-Based Costing Use in Response to External Environmental Contingencies

Connections to the literature. The third theme identified was quality costing and ABC use in response to external environmental contingencies. The external environment emerged as a theme in all seven case studies. Identification of quality costing and ABC occurred as primary strategies by which participants addressed specific external environmental factors to improve profitability. These findings disconfirm those of Armitage et al. (2016) who found that quality costing strategies were rarely used by SMEs, and those of Chatzipetrou and Moschidis (2016) who found that there is a direct relationship between organizational size and the investment in quality costs and that

small and micro-companies showed little interest in quality costing perceiving it as not useful. In contrast to prior findings, the findings of this study indicated that size does not influence the use of quality costing strategies, but that industry sector does.

Participation in quality costing programs requires a significant investment of time and resources which impacts the actual savings realized. This finding confirms those of Chatzipetrou and Moschidis (2016) who found that some enterprises have not acknowledged a reduction in costs due to quality improvement practices. Consumer and industry demands required organizations in some industries to devise new ways to reduce costs while at the same time proving quality. This finding confirms those of Kerfai et al. (2016) who found that customers demanded more quality in conjunction with lower costs, and those of McAdam et al. (2019) who found that a focus on customers, when paired with quality management practices, helped SMEs align to their environment.

The use of ABC appeared in limited contexts. The findings from this study confirm those of Legaspi (2018) who found that SME accounting managers do not use activity-based approaches to costing because they feel their businesses are too simple for ABC and that they are successful without it. Participants used ABC strategies in narrow contexts for specific product or service lines, with one participant indicating that more extensive use of ABC failed in terms of the cost-benefit trade-off. This finding confirms those of Pickering (2018) who suggested that small business accounting managers carefully analyze the cost-benefit trade-off of implementing ABC. The findings from this study also confirm those of Chenhall and Langfield-Smith (1998) who found that activity-based costing techniques provided the least benefit to firms surveyed.

However, the use of TDABC was evident in some case studies and participants noted its importance in determining more accurate product costs, and thereby improved profitability. This finding confirms those of Berikol (2017), Rajnoha and Dobrovič (2011), and Dejnega (2010) who found that the use of TDABC enabled more accurate cost calculations in SMEs. This finding disconfirms Legaspi's (2018) findings that SME accounting managers do not use any ABC because their businesses are too simple, and they are successful without it. Participants noted that the use of ABC practices was contingent on the expected cost-benefit trade-off. This finding confirms those of Pickering (2018) who found that the cost-benefit trade-off is a significant contingency in firms' decision to invest in ABC.

Presentation of data collected. The use of quality costing and ABC depended upon the industry in which the organization operates and the type of products and services provided. P1 discussed having obtained ISO 9001 certification in 2015 and how they embed quality into their products because of that saying, "under ISO, we are always trying to improve our workflow." The organization's website confirmed the obtainment of ISO 9001 certification.

Participants discussed the cost of quality within the healthcare industry. P7 underscored the costs associated with quality in the healthcare industry by discussing the use of checkpoints and control measures in the manufacturing process. P7 said, "every time the [specific product] gets touched, they scan it and we track it right down to when it leaves here." P7 continued to discuss measures that have been built into the production process to ensure quality stating, "They have to scan everything before they can proceed

on this. So, they'll scan this, and it will calculate the barcode," and "they go and weigh it and that balance is integrated into the system, so it tells you to go and weigh ten grams and if you're off by more than 3% it will stop. It won't let you proceed." An observation of this proprietary system confirmed the control features described by the participant.

P7 stated that they made a choice to commit to "national standards that... we strive to meet or exceed. They're not the law in the state of New Hampshire... but those [specific quality measures] are all followed by choice." The organization uses a "due-diligence checklist" that outlines the steps taken to adhere to two federal standards specific to this industry. Verification of the specific quality measures discussed by P7 took place through the observation of the organization's complete workflow processes, a review of the organization's webpage outlining specific quality metrics, and the retrieval of data from the national non-profit organization that administers the quality measures used by the organization.

A service organization within the healthcare industry devoted significant resources to determining the cost of quality. P6 discussed balancing quality and the cost of quality within the healthcare industry stating that determining the cost of quality is "for healthcare... the number one question." P6 went on to discuss the difficulty of "attribut[ing] the cost of quality," saying "at what point do you get to where cost is okay because the quality is there and how do you benchmark the quality and the cost at the same time?" In an attempt to balance cost and quality, P6 described their organization's choice to join an ACO saying, "the goal is to keep the same quality but reduce the overall cost of care. So, [the ACO] set[s] that target, and if you beat the target, the savings is

what we get back.” P6 concluded, “by reducing and tracking and monitoring the overall cost of care for [an] individual, we will get reimbursed... we will get paid back in terms of the shared savings overall for the Medicare program.”

P6 discussed several industry-specific programs such as Anthem BlueCross BlueShield’s Quality-In-Sights Hospital Incentive Program, a performance-based reimbursement program stating, “They look at a bunch of quality metrics and based on how you’re performing from a quality perspective, [they] give you an incentive payment.” In continuing to discuss quality costing, P6 said that the use of an industry-specific cost report helps show how costs were impacted by a shift toward quality. P6 stated:

The reason why we use a cost report is so we can ultimately get to that cost... so if there’s a shift to quality, we have to rely on the cost report to know...are we reducing, minimizing costs at the same time as improving quality.

P6 summarized by saying, “so it’s really advantageous for us to meet certain quality metrics.” A review of documentation from Anthem BlueCross BlueShield’s Quality-In-Sights Hospital Incentive Program website confirms the use of (a) patient safety, (b) health outcomes, and (c) patient satisfaction as metrics impacting reimbursement payments to participating hospitals.

P6 stated that there is a significant cost associated with participation in quality reimbursement programs and mandated federal reporting saying, “it causes us to have to build more workflows to capture the data to report on it,” adding, “people don’t understand there’s a huge cost to this,” and “the cost for us to do these programs directly

feeds into what we get reimbursed.” P6 elaborated, “There’s a lot of these requirements that cost us a lot to measure, monitor, and track and there’s not a lot of evidence to support that some of these things are successful in actually improving quality.” A review of documentation provided by the participant from the Healthcare Financial Management Association confirmed that ACOs’ shared savings earned from Medicare as a result of improved quality was in many cases negated by the significant new investments required in IT and care management.

In the case of healthcare, P6 cited the need to adapt to industry demands from both patients and insurance companies to find new ways to lower costs while maintaining or improving quality stating, “there is a huge shift for us to make corrections or adapt to what the industry is demanding and patients and insurance and everybody’s demanding.” P7 spoke of “national standards that...we strive to meet or exceed” and the fact that, “I’m quality and high quality... we don’t ever sacrifice quality” when discussing responding to consumers' demand for more competitive pricing without sacrificing quality.

Narrow and specific use of activity-based costing strategies was evident in SMEs with participants typically only using this costing strategy in limited contexts for specific purposes. P2 discussed using activity-based costing in, “specific areas of the company, and it has to do with the fact that we have some state-mandated programs... we use it mainly for compliance with... our state.” P2 went on to discuss using activity-based costing to track “how much it takes for billing to do the process of billing our members... to do credits, credits, and collections... to track projects or undertakings within the company.” In discussing the cost-benefit trade-off of using activity-based costing

strategies and the barriers associated with more prevalent use P2 stated, “We had activity codes for a lot of the functionality within our company, but we didn’t, we couldn’t find the value of all the work we put behind them.”

P6 expressed a desire to “assess the cost associated with a specific service line which is the same thing as activity-based costing, but to be able to break it down into the elements...that’s what the healthcare industry does really badly.” P6 stressed that “although possible, costs to implement wouldn’t be worth the benefit,” and said “we just don’t have the software, the technology, to be able to do it,” noting the necessity of additional software. P6 continued saying that, “you’ll never unless you can really get to the activity, we will never be able to truly allocate an expense per patient and know what the costs were for that procedure or that test.” A review of an industry study provided by P6 confirmed improved access to data and analytics as essential in the successful implementation of an activity-based costing system within the healthcare environment.

Participants used various strategies for implementing activity-based costing. P2 discussed primarily using interviewing techniques to support time studies saying, “We interview them and say how long does it take you to get to the average [customer’s location], how long were you there, and then we base it on that conversation, miles, average miles that they have to travel, we interview... our [customer service] department, they take phone calls and talk to our [customers] about this, we add that in, how long does it take you typically to talk to a [customer] about a situation or service. And so, it’s mainly based on interviewing.

The use of ABC became evident from the description by P3 of the process by which they build their schedule of fees and charges. P3 discussed the practice of “align[ing] cost with causation” and the need to “identify causation or cost generated by services.” P3 said that they use the drivers of cost, or activities, to build the fees schedule. A review of the organization’s schedule of fees showed fees broken down into nine major categories and numerous subcategories. Fees included fixed dollar amounts, percentages, and estimated costs and ranged from under \$20 to over \$7,000 depending upon the service provided.

P3 discussed the unique nature of their industry and the fact that the state dictates the franchise area, therefore consumers must use whoever services their geographic area likening it to a “regulated monopoly.” P4 underscored the need for consumer parity in the implementation of activity-based costing saying, “we realized that we were charging our production customers more than we were charging our [specific subset of customers] in some cases and vice-versa for the same thing,” and that using activity-based costing has “leveled the playing field for our customers and I think given them better pricing.”

Participants indicated the use of TDABC strategies when discussing the use of pilot batches to establish standard production times. P4 stated, “We keep those production logs for every time we do anything and on those, we track the actual time and the number of people required to do it.” Supporting documentation received from participants exemplified the use of time studies to determine how long certain activities took which was then assigned to a cost pool and ultimately attached to certain products.

Connections to the conceptual framework. Otley's (1980) CT as applicable to MA is prominent in the literature and focused on the impact of contingent variables on firms' choice of MAPs. External environmental contingencies influenced the use of quality costing and ABC. Well-documented in the literature is the impact of external environmental contingencies on firms' use of MAPs, evident with the work of Wadongo and Abdel-Kader (2014) who found that unpredictability of the external environment was a contingent factor in firms' choice of MAPs. The cost-benefit trade-off was a significant contingency underlying both quality costing and ABC strategies, as were consumer and industry demands. These findings confirm those of Kerfai et al. (2016) who found that customer demand for improved quality and reduced costs were contingencies in firms' use of quality costing, and those of McAdam et al. (2019) who found that customer focus and quality management practices better aligned SMEs to their environment.

Theme 4: Systems and Technology in Support of Modern Costing Strategies

Connections to the literature. The fourth theme identified was systems and technology in support of modern costing strategies. Systems and technology in support of modern costing strategies emerged as a theme from all seven case studies. Romney and Steinbart (2018) defined AISs as systems comprised of people, procedures, data, software, technology, infrastructure, and security protocols. AISs played an integral role in supporting modern costing strategies. Some AISs were housed internally within organizations, and others were cloud-based, especially those organizations using Intuit's QuickBooks Online (QBO) small business accounting software.

The interconnectivity of multiple systems emerged as an important requirement of accurate costing. These findings confirm those of Siska (2016) who found that cost management systems are a vital part of firms' overall MCS, and those of Ismail et al. (2018) and Novak and Vencalek (2016) who found that firms' must modernize their internal costing systems to compete globally with increased competition. Participants noted that the use of systems and technology supported more accurate cost measurements. This finding confirms those of Uyar (2019) who found that the use of systems by SME accounting managers supported more accurate cost management.

Presentation of data collected. All seven participants referred to some form of systems and technology when discussing the use of modern costing strategies. P1 underscored the vital role that Fishbowl, a small business inventory management system capable of producing bills of material (BOMs), plays stating that, "it actually interacts directly with QuickBooks. It's a partner software to QuickBooks, they interact, they play back and forth pretty well. And from my perspective, that's the most important thing is knowing that I'm doing the right math." An observation of a BOM generated from Fishbowl confirmed the interview data. A review of documentation from the Fishbowl website confirmed its status as the number one manufacturing and inventory management software for QuickBooks and its ability to support manufacturing, distributing, selling, or servicing organizations of any size through automation and integration.

Also stressing the importance of software interaction, P2 described the use of multiple systems including Excel working in conjunction with one another to aid in costing saying:

It's all Excel-based, but the data that we use it comes from... our accounting application... and then we have our... customer information system and they talk to each other, so all our billing automatically feeds over to our accounting, and so we take information out of that.

P3 elaborated on the use of an Excel add-on called Axiom saying, "Axiom is basically a plug-in to Excel and what it allows us to do is have Excel functionality, but actually have a database in the back-end which makes it so much more powerful." P3 stressed how using Axiom in conjunction with Excel allows the querying of big data supporting business intelligence and analytics. An observation of this extensive Excel workbook with Axiom database support confirmed its ability to act as a business intelligence tool beyond the limitations of a stand-alone Excel program.

The use of mainstream technologies such as Excel appeared in all but one case as both small and medium-sized organizations engaged in both service and manufacturing functions, cited Excel as a tool that supports modern costing strategies and improved profitability. Both P4 and P5 referred to the use of an Excel-based product costing configurator used in target costing to confirm the acceptability of prices in the market. Direct observation of this Excel workbook confirmed its ability to update product costs due to changes in raw material prices, its ability to project market prices at different "tiers," and its ability to capture data supporting TDABC. P6 alluded to using Excel for the management of data saying we, "collect all this in Excel" as did P7 who said they, "pull the data for the day" and it "all goes on the spreadsheet."

The use of QuickBooks, Intuit's small business accounting software, was evident in organizations focused on small-scale manufacturing. P1 discussed the export of BOMs and cost information from their inventory management system into QuickBooks saying the inventory management system "actually interacts directly with QuickBooks" underscoring the importance of accurate cost information. An observation of a BOM from the Fishbowl system confirmed the itemization of raw materials parts, and a review of documentation from the Fishbowl website confirmed its ability to automatically integrate with the QuickBooks system. P7 stressed how QuickBooks works with their proprietary costing system saying that they, "pull data from [proprietary system] into QuickBooks." Both P4 and P5 confirmed their use of QBO for capturing cost information generated by Excel and for the purpose of accepting payment by credit card. A review of documentation from Intuit's QuickBooks website confirmed its ability to generate online invoices and accept payment by debit card, credit card, or automatic clearing house bank transfer.

Proprietary systems assisted the costing of products in the healthcare industry. P6 discussed the healthcare industry's reliance on the Excel-based cost report. When asked about specific accounting software, P6 said, they "collect all this in Excel and use our People Soft system" for general ledger transactions. A review of documentation from an archived cost report for this organization confirmed it to be an extensive multi-tabbed Excel workbook, but observation of the People Soft system did not occur due to time constraints. In describing the use of software, P7 said "It's proprietary to [specific business type]. It's pretty simple. Database formula. Nothing too crazy. But what we

can do is breakdown... we have like ten segments that we can program in there... we can actually make margins for each segment.” An observation of this proprietary, industry-specific software program confirmed the ability of the system to calculate product cost based on inputs and include costs for clinical, technical, and other segments.

Connections to the conceptual framework. The underlying assumptions of the CT as applicable to MA are that the structure of an organization depends on firms’ environment and their use of technology (Tiessen & Waterhouse, 1983). Researchers noted technology to be a contingent factor in firms’ adoption of MAPs (Azudin & Mansor, 2018; Legaspi, 2018; Uyar & Kuzey, 2016). The findings from this study indicated the use of cloud-based programs such as QBO in conjunction with other proprietary and industry-specific systems to support modern costing strategies. These findings confirm those of Cleary and Quinn (2016) who found a positive correlation between cloud-based technologies and firms’ adoption of MAPs, and those of Azudin and Mansor (2018) and Uyar and Kuzey (2016) who identified the presence of technology as a contingent factor impacting firms’ use of MAPs. However, these findings disconfirm those of Legaspi (2018) who found that a commitment to technology was not directly related to firms’ adoption of MAPs.

Firm size was a contingent factor in the level and complexity of systems used. Participants in small enterprises (less than 20 employees) used QBO as their primary AIS in conjunction with Excel or some industry-specific software. Participants in medium-sized enterprises (over 200 employees) used industry-specific software that supported more robust cost calculations; however, participants from medium-sized enterprises also

noted the use of Excel for specific cost calculation support. These findings confirm those of Hasyim and Jabid (2019) who found that firm size was a contingency impacting the level of cost accounting system use.

Theme 5: Organizational Attributes as Factors in Modern Costing Strategy Use

Connections to the literature. The fifth theme identified was organizational attributes as factors in modern costing strategy use. Organizational attributes emerged as a theme from all seven case studies and was a theme that transcended the previous themes already presented. The organizational attributes theme included the three components of structure, culture, and strategy. The findings of this study included that modern costing strategies were sometimes informal and implemented using customized tools created internally within organizations. The findings of this study confirm those of Ngoc and Takacs (2018) who found that SME's choice of structure impacted their adoption of MAPs.

The culture within SMEs emerged as a significant determinant in their likelihood to use modern costing strategies. The findings of this study included that some SME owners unknowingly used modern costing strategies and that management mindset, employee engagement, commitment to education, and time constraints influenced modern costing strategy use. The findings of this study confirm those of Godil and Shabib-ul-Hasan (2018) and Ngoc and Takacs (2018) who found that the culture of firms' internal environment positively impacted SMEs' adoption of MAPs, as did management mindset toward learning and culture.

Findings from this study indicated that SMEs used multiple modern costing strategies simultaneously. The findings from this study confirm those of Yigitbasioğlu (2017) who found that the influence of top management and flexibility within information systems drove management accounting adaptability in firms. The findings from this study also confirmed those of Godil and Shabib-ul-Hasan (2018) and Legaspi (2018) who found that SME's choice of strategy influenced their adoption of MAPs.

Presentation of data collected. Participants shared contrasting approaches to the internal structure within SMEs. Some participants described an informal approach to modern costing strategies. P1 said, "it's not like it even has to be formal as a small business it's just part of your daily life now because you just live and breathe it every day... it's continuous monitoring, it's not even formal, it just is" when discussing ongoing efforts to control costs. In discussing cost management, P1 stated "it's kind of engrained as a small business, as the purchasing people who manage the checkbook... you have an intuitive sense that I'm going to look for the best price." In discussing the use of lean strategies, P7 stated,

I don't have a formula for it, a lot of it is just knowing what I sell, and knowing how much I sell and knowing the business, but looking at not tying up a whole bunch of cash, because I'd much rather have some money in the bank to pay my bills than looking good on paper, but struggling, and then going to the bank for a line of credit.

In an acknowledgment that changes to the internal structure of the firm would be required to implement additional costing strategies, P1 said, "Every minute I'm sitting here is an

opportunity cost. I should not be at my desk. I should never be here.... When I'm on the road, stuff happens. It just does....”

Other participants noted a more formal approach to modern costing strategies. P6 described the structure supporting their participation in the ACO:

So, for the ACO model, it was really important because it's looking at, it's not just cost, right, it's quality cost, and for healthcare, what does that mean, that means everybody in the whole [healthcare entity]. We have a physician that's a key stakeholder, we have a compliance key stakeholder, we have a finance key stakeholder, we have... [a] case manager... on the task force, [specific name], CEO is on it, and so the way the structure works is, it's very structured in that we have a management team, and then we each have our own committees, so there's a finance committee, there's a compliance committee, there's a clinical improvement committee, and so we all have our own rules, right, we're looking at cost and trying to come up with strategies to reduce cost, while collaborating with the provider group to improve quality and so we have to work together very closely.

Participants stressed the need for continuing education for not only themselves, but their employees, and in some instances, their customers. P2 indicated that it is management's function to, “help our employees think differently about how they get things done” and move away from the mindset of “it's the way we've always done it” into one where “employees are excited by this process.” P2 continued saying, “it's almost like a light goes off” and discussed specialized training of employees in conjunction with

the movement away from an external consultant. P7 discussed “studying” strategies and how they “read about the process and the methodology and it makes sense with what we’re trying to do” and how they were “looking closer into” certain models and considering sending employees to formalized training.

P4 discussed the need to educate customers saying they spend considerable time “working with people to get them out of what we call the farmers’ market mentality,” and P5 discussed a conversation with one customer about pricing his product too low as a result of not accounting for all of the expenses, and how that customer “had to stop [selling product] because he had underpriced it for so long, he couldn’t afford to grow.” P6 indicated their organization’s participation in an ACO resulted from managements’ desire to learn and adapt to changes saying,

This is a learning experience for us. We have to be able to learn; we have to adapt and figure out how to do it. There’s a lot of us that feel that we have to at least start dabbling in it to really understand because a new costing strategy or method is new... we have to be able to adapt to change.

The implementation of modern costing strategies was a function of employee participation in SMEs. P2 stated that to implement new costing strategies, they took the approach of, “let’s see if there’s buy-in from the company and then let’s get our employees on board.” When asked about barriers to the implementation of modern costing strategies, P7 replied that it is “all human barriers” and that “getting the buy-in” and “educating staff on why it’s important, what’s the value of it” were the most significant contingencies impacting the use of new costing strategies. P2 underscored the

desire for “business process improvement to become a core element of the company.” Also citing a change in employee mindset, P7 stated, “it’s all education, and [helping them] understand why we do things,” when referring to the successful implementation of new costing strategies.

P6 discussed size as a factor in their organization’s quality costing strategies saying: “From a hospital perspective, we are tiny. We’re a small hospital. So, for us to be able to survive, especially in rural New Hampshire, that cost-based reimbursement is literally why we can be sustainable.” Because of their reliance on cost-based reimbursement, P6 said, “it’s very important that the cost report and the costing mechanism associated with that is very accurate.” A review of documentation from the New Hampshire Department of Health and Human Services confirms this healthcare facility’s designation as one of 13 small, rural critical care access hospitals.

Participants used multiple costing strategies simultaneously and sometimes did not distinguish between individual strategies. P1 evidenced this saying, “I think we do a bunch of different things.” The use of target costing was prevalent, as five of the seven cases used this costing system in some capacity. All SMEs studied used at least two different types of modern costing strategies. One participant used as many as four different modern costing strategies, and on average participants used 2.7 different modern costing strategies. Table 2 summarizes the modern costing systems used in New Hampshire SMEs.

Table 2

Modern Costing Strategies Used in New Hampshire SMEs

	Target costing	Life-cycle costing	Lean costing	Quality costing	Activity-based costing	Total strategies used
Case 1	X			X		2
Case 2			X		X	2
Case 3			X		X	2
Case 4	X	X			X	3
Case 5	X	X			X	3
Case 6	X		X	X		3
Case 7	X	X	X	X		4
Total	5	3	4	3	4	19

Participants commented on how their costing strategies and tools were customized to their needs and created internally, sometimes because of a lack of available alternatives. When referring to a specific internal cost calculation, P2 said, “We have a very in-house calculation of how we do that.” P2 continued saying, “as far as like a cost of service study or rate setting, or the way we do our fees and charges, it’s very, I hate to say, simplistic in nature, but that’s basically what it is.” P3 acknowledged that the system they use to calculate costs for the schedule of rates was built in-house and hosted internally. An observation of the Excel-based rate calculation tool confirmed the fact that it was created internally by administrators within the organization and resided on an internal server. A review of documentation showing the organization’s schedule of rates showed a total of nine different rate classes.

Connections to the conceptual framework. The CT as applicable to MA focuses on the relationship between the organization, its structure, and its environment, and explains how when an organization’s structure is aligned with its environmental

contingencies improved performance is possible (Otley, 1980, 2016). As confirmed by this study, the organizational attribute of internal structure was a significant contingency in firms' use of modern costing strategies. This finding confirms those of Uyar and Kuzey (2016), and Yigitbasioğlu (2017), who found the organizational determinant of internal structure was a contingency impacting firms' choice of MAPs. Internal culture and a focus on employee engagement and education were contingencies in firms' use of modern costing strategies, as was firms' strategy and size. These findings confirm those of Uyar and Kuzey (2016) who found that internal environmental factors or contingencies impacted the adoption of MAPs, and those of Cuzdriorean (2017) and Legaspi (2018) who found that SMEs' level of resources impacted their adoption of modern costing strategies.

Applications to Professional Practice

The findings of this study could benefit SME accounting managers in their professional practice by conveying new information and offering practical methods for implementing modern costing strategies for improved profitability. A significant finding was that the use of target costing is prevalent in SMEs. The findings of this study detail ways in which SMEs used target costing in overall cost management through the management of input costs and the careful selection of target markets. SME accounting managers might improve profitability by using target costing strategies during the product design stage of new products to reduce overall input costs, to make decisions regarding targeted markets, to establish minimum batch sizes prior to production, or to

set parameters for order acceptance, which aligns with Uyar (2019) who stressed the use of target costing for improved business performance.

The finding that lean strategies underlie business practices in SMEs may be noteworthy. The findings of this study detail how SME accounting managers constantly evolved their strategies through a focus on continuous improvement. SME accounting managers might improve profitability by using lean strategies and business process improvement methods throughout the production process to reduce costs and eliminate waste. SME accounting managers may find that focusing on employee participation and buy-in will better support the implementation of new costing strategies.

The finding that quality costing and ABC use occurred in SMEs within limited contexts unrelated to organizational size disconfirms prior research. In this study, organizational size did not influence the use of quality costing or ABC, but consumer and industry demand along with external factors such as regulatory policies did. SME accounting managers in industries where quality costing and ABC strategies might be useful may realize that the size of the organization does not need to be a deterrent in the decision to seek out quality costing or ABC for improved profitability. The findings of this study may be relevant to the effective practice of business because modern costing strategies might receive further exploration by SME accounting managers if preconceived notions about qualifications for their use can be dispelled.

The finding that the presence of AISs played a key role in the implementation of modern costing strategies may be relevant. The findings of this study detail the importance of investments in systems and technology by SMEs and that systems must be

interconnected to provide the most benefit. The findings that systems and technology may need to be customized to the SMEs' specific needs to offer the greatest benefit in terms of a cost-benefit trade-off and that the use of accessible technologies such as Excel can aid in the design and implementation of an automated product or service costing tool may be relevant to the effective practice of business.

The final finding of this study may be the most poignant that the organizational attributes of strategy, structure, and culture have a significant impact on SMEs' propensity to use modern costing strategies. SME accounting managers may find it useful to understand the significance that strategy, structure, and culture has on the implementation of modern costing strategies. Awareness of the fact that minimum size requirements for SMEs are not necessary to successfully use modern costing strategies may be useful information for SME accounting managers. SME accounting managers may find it helpful to understand that employee engagement, and ongoing training and education for not only employees but also ownership and management positively impacted the successful adoption of modern costing strategies. The recognition that time constraints make the implementation of new costing strategies challenging might be useful information for SME accounting managers to possess.

The findings of this study may be relevant to improved business practice because of the sharing of strategies for modern costing implementation with other SME accounting managers. SME accounting managers who may not have knowledge of modern costing strategies or who felt modern costing strategies were unachievable or not the right fit for their SME may benefit from new knowledge. SME accounting managers

may realize that they can be successful in their use of modern costing strategies for improved profitability provided they match their organizational attributes to their external environmental contingencies.

Implications for Social Change

The implications for positive social change include the potential improved ability of SMEs to contribute resources to their local communities. An improved ability to monetarily support local communities occurs when SMEs are profitable (Johnson et al., 2017; Razalan et al., 2017), as contributions to targeted causes enable the promotion of economic justice, social cohesion, and environmental sustainability (McCaffrey & Kurland, 2015). Communities, residents, and local economies receive the benefit of the growth and long-term economic stability of SMEs (Johnson et al., 2017; Park & Campbell, 2017), through the contributions of new products and services, job creation, and economic growth (Eschker et al., 2017; Johnson et al., 2017).

Profitability directly impacts SMEs' level of philanthropic activities (Razalan et al., 2017). The relationship between SMEs and their local communities is unique and influences both the philanthropic activities of the SME and the level of corporate citizenship SMEs display (Park & Campbell, 2017). Improved profitability has a direct bearing on SMEs' level of corporate citizenship and therefore the socioeconomic actions taken within their community (Gardberg & Fombrun, 2006). SME accounting managers may find improved profitability possible using modern costing strategies which might enable them to increase their level of socioeconomic actions such as increased

sponsorships of special events or donations to schools and outreach organizations supporting local community residents.

Recommendations for Action

It is my intention to share the findings of this study with SME accounting managers as they seek new alternatives for improved accuracy of product and service costing. Improved accuracy in the costing of products and services can inform better decisions about pricing, order acceptance, and minimum order size, as well as inform decisions about the discontinuance of products and services which can lead to improved profitability (Wouters & Stecher, 2017). SME accounting managers may benefit from the recommendations of this study as they pertain to the use of modern costing strategies for improved profitability.

The strategies that emerged were (a) the prioritization of cost management using target and life-cycle costing, (b) a focus on continuous improvement and efficiencies via lean strategies, (c) quality costing and ABC use in response to external environmental contingencies, (d) systems and technology in support of modern costing strategies, and (e) organizational attributes as factors in modern costing strategy use. SME accounting managers could focus resources on the development or reconstruction of their procurement processes to establish procedures for ensuring that input costs are managed during the product design stage. Having more than one vendor or supplier for inputs, establishing and maintaining good vendor relationships, and constantly monitoring fluctuating prices are strategies that could help SME accounting managers minimize input costs prior to production.

Using minimum batch sizes in production and making strategic decisions about which markets to sell products and services are other strategies that SME accounting managers could use to manage costs and target cost their items during development. SME accounting managers might benefit from the development of a product or service costing tool or model to help them accurately cost products and services. Using readily available and inexpensive software such as Excel could support this effort.

SME accounting managers could use lean strategies during the production process to eliminate waste and create efficiencies and could do so by using value stream mapping to accomplish business process improvement. To be successful in these continuous improvement efforts, SME accounting managers could develop training programs for their employees to establish buy-in and support for new costing strategies. Regular communication with employees and the establishment of metrics to measure progress toward goals could support these initiatives. SME accounting managers could benefit from being mindful of their customers, markets, and the industry in which they operate and aligning their costing systems with their external environment. Investment in costing systems that make sense for specific industries or a specific product or service line could be advantageous for SME accounting managers. Obtaining ISO 9001 certification or achieving quality metrics that are respected within a specific industry are options that SME accounting managers could consider. SME accounting managers might be inclined to consider quality costing and ABC strategies if they felt confident that the size of the SME did not matter.

SME accounting managers could benefit from the evaluation of and potential investment in systems and technology that provide customized and integrated solutions. Small business inventory management systems with BOM functionality that has the capability of integrating with SME accounting systems such as QuickBooks may improve the accuracy of product costs for SME accounting managers. Investment in industry-specific or proprietary technology could improve the accuracy of costing. Engaging staff members in the build of home-grown costing systems using Excel or database programs might prove useful for SME accounting managers.

A final recommendation for action for SME accounting managers is to align modern costing methods with the organization's internal attributes such as its strategy, structure, and culture. SME accounting managers could take action to implement multiple costing strategies in varying depths in whatever degree of formality they need to be successful. The delegation of resources and prioritization of time toward the study of modern costing strategies are considerations that SME accounting managers may find useful. SME accounting managers could benefit by taking action even if they do not feel they have an expert level understanding of strategies as they may find that incremental steps towards implementation would prove useful.

As an instructor of accounting in higher education, I will use my affiliation with the Institute of Management Accountants (IMA) and the American Accounting Association (AAA) to identify channels to share my findings through various conferences. It will be my intention to publish these findings in academic journals that

align with this research such as *Management Accounting Research* and *Qualitative Research in Accounting and Management*.

Recommendations for Further Research

In this study, I performed a multiple case study with seven participants in two rural counties in New Hampshire, investigating the modern costing strategies used within SMEs to improve profitability. A limitation of this study is the transferability of the study's findings to other SME accounting managers, as results may not be transferable to all organizations. New Hampshire is a small primarily rural state. Research in larger higher populated areas might yield different results.

Limited information exists regarding the methodological development of target costing and the influence of information systems on target costing (Ahn et al., 2018). Further research could focus exclusively on the impact of information systems alone and their impact on target costing strategies. Further research might also isolate certain contingent factors and study their direct impact on the use of modern costing strategies.

An important recommendation for further research is greater use of case studies in the study of MAPs and internal costing systems in SMEs. Some participants unknowingly adopted modern costing strategies but could not initially identify the practices used by name. Through questioning by me, the use of these modern costing strategies became evident. This study's findings disprove prior research that indicated that most SMEs do not use modern costing strategies. Based on the findings of this study, it appears that modern costing strategies do exist in SMEs, but that prior research failed to discover their use.

The lack of more prevalent use of modern costing strategies in SMEs may be in part due to a historical reliance on quantitative survey research in studies of modern costing strategies. In the future, researchers should use more case studies as they could potentially identify a more prevalent use of modern costing strategies that quantitative studies historically failed to capture. Greater use of case study research may change what it is known about the use of modern costing strategies in SMEs as quantitative survey responses would not capture modern costing strategy use if participants were not able to identify the strategies they used by name.

Reflections

Navigation of the doctoral study process greatly enhanced my skills as a scholarly writer and researcher. Reinforced to me through this process was the importance of supporting research with facts and evidence and removing all personal bias. The skills obtained in this process will support me as I grow as a researcher and faculty member in higher education.

In my experience as a small business owner and instructor of accounting, the focus of any product and service costing discussion has always been on traditional costing methods. My preconceived ideas about SMEs' tendency to use predominantly traditional costing strategies found support in the review of the literature. A review of the literature indicated that two thirds of SMEs do not use modern costing strategies (Armitage et al., 2016; Cuzdriorean, 2017). After completing the review of the literature, I understood that finding SMEs who were using modern costing strategies for improved

profitability might be challenging, and it was, in part because not all participants were able to identify the strategies they used by name.

I contacted over 60 potential participants by e-mail, some of which declined because they said they did not use modern costing strategies, others of which may have felt that my request to discuss and observe their internal costing strategies was an invasion of privacy or breach of confidentiality regardless of my claims to the contrary. Other potential participants may not have thought that the costing strategies they used met the study's requirements. It was only through conversations with participants who were inclined to share their strategies, but unsure if the strategies they used matched the focus of the study, that I was able to determine if they met the study's criteria. I eventually found five organizations who met the study's requirements and seven participants willing to share their costing strategies.

My site visits and interviews may have been a catalyst for participants to take a more proactive approach toward learning about the modern costing strategies used by other SMEs. The findings from this study changed my thinking about the use of modern costing strategies in SMEs as I learned that participants used multiple modern costing strategies simultaneously in varying degrees of complexity. In conversations with participants, I found that they had an intuitive sense that allowed them to unknowingly gravitate toward a better way to cost their products leading to the use of modern costing strategies. This revelation underscored the importance of management knowledge and intuition as contingent factors in the adoption of MAPs and the analysis of management accounting decisions.

Conclusion

SME accounting managers use modern costing strategies to improve profitability. Target costing and life-cycle costing emerged as strategies used in cost management to control input costs and determine minimum batch sizes, and lean practices emerged as strategies useful in supporting continuous improvement and efficiencies. Identification of quality costing and ABC was evident in response to consumer, market, and industry demands, and the importance of customization and integration of systems and technology became apparent. The impact of organizational attributes such as strategy, structure, and culture on organizations' use of modern costing strategies helped explain how some SME accounting managers use specific modern costing strategies to match their organizational structure with their environmental contingencies to improve profitability.

The research findings underscored the importance of delegating resources and prioritizing time toward the study and implementation of modern costing strategies. A commitment to continuous improvement and the pursuit of new knowledge proved useful in fostering a supportive environment for new costing strategies. SME accounting managers implemented modern costing strategies in varying levels of complexity and formalness based on internal and external contingencies which could mitigate barriers to adoption for those SME accounting managers considering the use of these strategies. Increased globalization, innovations in product design, and advances in technology mean SMEs accounting managers could benefit from modernizing their internal costing systems to improve profitability.

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Appendix A: Interview Protocol

Interview Protocol	
<u>What to do:</u>	<u>What to say:</u>
<ul style="list-style-type: none"> • Provide a short introduction of myself and the purpose of the research study. • Provide a short review of the interview format, a reference to the signed consent form, and a reminder about the participant's right to withdraw from the interview at any time. 	<p>My name is Jennifer DeMoras, and I am a student in the Doctor of Business Administration program at Walden University. I am also an Instructor of Accounting at Plymouth State University and a small business owner in New Hampshire.</p> <p>I want to thank you for taking the time to speak with me today and for allowing me to conduct this interview with you.</p> <p>The purpose of this interview is to gain insight into what modern costing strategies your organization uses to improve profitability.</p> <p>This interview should take 45 to 60 minutes and will consist of the eight interview questions I provided to you in our prior e-mail correspondence. Once our interview concludes, I will ask that we engage in an e-mail exchange where I will ask you to member check or confirm my interpretation of the information you provided. You, of course, will be provided a copy of the study's findings upon its conclusion.</p> <p>I have in my possession a copy of your signed consent form. As a reminder, you have the right to withdraw from this interview at any time. I will be recording today's interview to ensure accuracy in data transcription. At no time will your name and information or that of your organization be revealed. Your identity and that of your organization will always be held confidential and will only be used for this research study.</p> <p>Do you have any questions for me before we begin? If not, I will go ahead with the interview and begin the recording.</p>
<ul style="list-style-type: none"> • Begin asking the eight structured interview questions. 	<ol style="list-style-type: none"> 1. What modern costing strategies do you use to improve business profitability? 2. What contingencies influenced your company to choose those specific modern costing strategies to improve profitability?

<ul style="list-style-type: none"> • Paraphrase where needed. • Watch for non-verbal behavior. 	<p>3. How did choosing those specific modern costing strategies help match your company's organizational structure to its environmental contingencies to improve profitability?</p>
	<p>4. How did you implement your modern costing strategies to improve profitability?</p>
<ul style="list-style-type: none"> • Ask follow-up questions or probing questions where appropriate to drive the conversation deeper. 	<p>5. What were the key barriers to implementing your modern costing strategies to improve profitability?</p>
	<p>6. How did your organization address the key barriers to implementing its modern costing strategies to improve profitability?</p>
	<p>7. How have you measured the effectiveness of your modern costing strategies to improve profitability?</p>
	<p>8. What other information can you provide about the modern costing strategies your organization uses to improve profitability?</p>
<ul style="list-style-type: none"> • Complete interview 	<p>That concludes the questions I have for you today. I want to thank you again for your time today. Are there any questions that I can answer for you before we wrap up for today?</p>
<ul style="list-style-type: none"> • Schedule member checking follow-up 	<p>Before I go today, I would like to take a moment to confirm your willingness at a subsequent date to respond to my e-mail within one week to confirm or correct my interpretation of the information shared today.</p>

Appendix B: E-mail Invitation to Participants

Dear Participant,

My name is Jennifer DeMoras, and I am a doctoral student at Walden University and an Instructor of Accounting at Plymouth State University.

I want to invite you to participate in a research study exploring the modern costing strategies small- and medium-sized enterprise (SME) accounting managers use to improve profitability.

For this study, modern costing strategies include *any* of the following:

- activity-based costing (ABC)
- target costing
- life-cycle costing
- kaizen costing
- lean costing
- quality costing
- just-in-time (JIT) costing

Specifically, I am seeking SME Chief Financial Officers (CFOs), Controllers, or Accounting Managers at firms in operation for at least 5 years in New Hampshire, who have at least 3 years of experience in a management accounting role and who use modern costing strategies to improve profitability. If you use *any* of the modern costing strategies just described, and meet the eligibility criteria detailed above, I would greatly appreciate your participation in this study!

This research is for *academic purposes only*, and all information shared with me will be held **confidential** in adherence with strict protocols for the protection of participants. **Generic identifiers for all participants and firms will be used, and all data collected will always remain private and confidential.**

Your participation in this study would require a time commitment of no more than *45 to 60 minutes* for an interview at your place of business, followed by an e-mail exchange at a subsequent date to verify my interpretations of your responses.

If you are willing to participate in this study, please review the consent form included in this correspondence and reply to this e-mail letting me know of your interest and of any questions you have.

You may reach me at [redacted], or by responding to this e-mail at [redacted]. I look forward to hearing from you.

Warmest Regards,
Jennifer DeMoras, MBA, CMA
Doctor of Business Administration Candidate, Walden University

Appendix C: Observation Protocol

Software programs and other technology used to support product/service costing:	
Direct materials tracking:	
Direct labor tracking:	
Manufacturing overhead tracking:	
<u>Activity-based costing</u> Methods used to capture activities and cost:	
<u>Target costing</u> Methods used to track costs at the design and development stage:	

<u>Life-cycle costing</u> Methods used to track costs at various stages in the manufacturing process:	
<u>Kaizen costing</u> Methods used to minimize costs and eliminate waste during the production process:	
<u>Lean costing</u> Methods used to track costs in the aggregate at the value stream level:	
<u>Quality costing</u> Methods used to track the cost of quality:	