

Master thesis : "The developing role of the financial controller. A contemporary study about evolving activities and personal characteristics in the controllership function."

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Diplôme : Master en sciences de gestion, à finalité spécialisée en MBA (Horaire décalé)

Année académique : 2021-2022

URI/URL : <http://hdl.handle.net/2268.2/14001>

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The developing role of the financial controller

A contemporary study about evolving activities and personal characteristics in the controllership function

HEC Liège

Open borders MBA 2020 - 2022

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For an Open Borders MBA Certificate and a
Master in Management option MBA

Academic Year 2021/2022

Preface

This is it!... The final, final version of the MBA thesis and with that, the last sprint towards graduation. If we would have had this conversation about 3 years ago, I would have never imagined engaging myself in such a demanding MBA program in my early to mid- 30's. In the light of “when life gives you lemons, make lemonade and sell it to all who get thirsty complaining”, the Covid-19 pandemic has been the optimal timeframe to fully focus in an ever-busy life. These two years have brought me experiences, memories and insights on business as well as about my inner self, that I will carry on for the rest of my life.

First of all, I would like to thank my family and friends for the ultimate support they gave me along this path. There has been an awful lot of “No, I can't because I need to study”, which they all accepted as it was in my best interest. I would like to thank my fellow students for making these two years memorable in all respects. I would also like to thank my team in Medtronic for continuously believing in me and allowing me the opportunity. In particular, I would like to thank Prof. dr. Sigrid Vandemaele for her support, her swift feedback, and valuable insights. Without all of you, it would have been a lot more difficult.

Maurice Chaniotakis

May 2022



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1 Introduction

This MBA thesis presents the outcome of the research that has been conducted in order to finalize the Master study in Business and Administration where I have been member of Cohort 9 of the Open borders MBA program hosted by Hasselt University, HEC Liege and FH Aachen.

The thesis is built around the evolving role of the financial controller and is mainly centered around the influence of personality traits and personal characteristics on the contemporary financial controller's role.

This chapter will focus on introducing the background of the research study including a clear definition and contextualization of the phenomenon. It translates the management issues into objectives that summarize the aspiration of the research study. Furthermore, it provides a preview on the next chapters to follow.

1.1 Background

The 20th and 21st century have brought a rapid evolution in enterprises all over the world. Common drivers of this change in empirical literature are globalization of markets, evolution of information technology, advances in production technology and increased competition. Increased competition resulted in organizations to reorient, increase interest in the market environment, competition, and customer orientation. Information technology evolution has driven innovation and changed the way information is collected, analyzed, and communicated in and between organizations. New management methods and innovative productions systems were developed in response to this change, which made organizations focus more on core competences and outsource other activities. These factors were and still are influential on the changing scope of the role of the Finance and Controllershship functions.

Over the years, a multitude of theoretical models have been outlined to develop organizational strategy, to assess risk and opportunities or to streamline business processes, such as activity-based costing (Kaplan & Cooper, 1998), balanced scorecards (Kaplan & Norton, 1992) and Porter's Five Forces (Porter, 1985), all intended to support managerial decision-making. The idea is for management to use these tools to allow for more accurate and well-informed decision making between several alternatives, to ensure business continuity and add value to the organization. The guiding principle of value creation is a refreshingly simple construct:

companies that grow and earn a return on their capital that exceeds the cost of capital create value when they have the ability to generate cash flows now and in the future. It links directly to competitive advantage, the core concept of business strategy. Only if companies have a well-defined competitive advantage, they can sustain growth and high returns on invested capital. (Koller et al., 1990).

Since no organization has unlimited resources at its disposal, it requires well informed managerial decision making to optimally allocate resources to achieve the strategic business objectives that were earlier developed. This includes among others, the most efficient deployment of resources in the financial department. As a result of internal and external developments, finance functions are periodically re-evaluated in order to ensure that roles, responsibilities and activities are still aligned with business strategy. The value proposition of the finance function changes with demands of the recipients it serves (Chang et al., 2014) Achieving the next frontier in finance efficiency and effectiveness will likely require finance executives to shift their thinking from the priorities of the past (Agrawal et al., 2020).

Over the past decades there has been a considerable amount of research done about the role of the financial controller. This dissertation originates from a financial controller's curiosity regarding the career development of the function and the implications it entails for the future careers of controllers in general.

In order to cope with the evolution in the marketplace and to continue to add value to the organization, financial controllers are expected to pivot from processing transactions and reporting towards driving profitable growth and reducing costs through strategic business support. The literature suggests a considerable change from the traditional role of “bean counters” towards a more strategically business-oriented role as “business partners” (Järvenpää, 2007). By the increasing degree of dynamics in the organizational environment and technological developments in the field of information provision, the role of the business partner seems to be stimulated and envisions the financial controller as a guardian of the viability of the organization, adding more value to the strategic direction of the organization (Slagter et al., 2003). This implies that there seems to be a paradigm shift from an independent, guardian role towards a more involved and advising role.

There are discussions about a widened scope of activities where the controller develops himself from a supporter on the sideline towards a co-strategist who is part of the management. Ambiguity in existing literature exists which makes one wonder however whether the suggested development actually takes place in reality. Optimists of this theory observe the current breed of financial controllers being active in non-traditional domain areas that previously would not have been considered for the controller but rather for a CFO. Examples would be supporting and reviewing the sales department on promotional campaigns, designing rebate schemes, acting as a gatekeeper in granting loans to customers, building a tax strategy to optimize profits or even advising comprehensive advice towards the executive board. However, others state that still most of the time, controllers perform activities within their traditional steward and operator roles, which include managing risk, preserving assets and running the day-to-day finance operation (Waelter et al., 2018).

Sathe (1982) has developed a theoretical framework to study the involvement of controllers. The framework comprised of different categories of drivers that influence the role of the relationship between the controller and management. One of the categories draws to the personal characteristics and personality traits and therewith supports the Role theory developed by Katz & Kahn in 1978, in which a relationship is established between personal characteristics and the role that someone fulfills within an organization. A role is part of a position that consists of recurring activities and actions (Heckman, 1988). On the contrary, Katz & Kahn also suggest that the role that someone fulfills within an organization has effect on the personal characteristics. Both assumptions result in the statement “We become what we do”.

Others have also conducted research in relation to the evolving role of the controller and category of drivers that could be of any influence. Examples are Verstegen (2007), Byrne and Pierce (2007) and Hopper (1980). All of them conclude that among others, personal characteristics are of influence on the controller’s role and thus the activities they perform.

As businesses are growing and becoming more complex, this also means that there is more exposure for financial controllers across organizations. The ultimate objective of controllership transformation is to evolve into a strategic business partner, focusing on future opportunities and risks. As a strategic business partner, the controllership function shapes the future development and growth of the company by providing management with data-driven insights and recommendations for action.



1.2 Objectives

The objective of this research is to explore the theory of financial controllership change and in particular what the influence of controller's activities and personal characteristics are on its developing role. After development of theoretical construct, a research methodology has been developed followed by a questionnaire conducted within the global controllership organization of Medtronic. The learnings of this research will serve as a basis for management recommendations that will be provided to Medtronic and in particular to the EMEA central controlling team, I am part of.

Specifically, to reduce the knowledge gap surrounding the contemporary role of the financial controller and in particular the activities and personal characteristics, the objectives of this thesis are:

1. To develop an understanding of how the role of the financial controller has evolved over time.
2. To develop an understanding of the coherent combinations of activities financial controllers performs in this role.
3. To identify the different personal characteristics and personality traits of a financial controller that could predict role membership.
4. To develop an understanding and conclude on the current situation within the controllership organization in Medtronic

The literature suggests an evolution of the role over the last decades and this master's dissertation aims to contribute by conducting research on the activities performed and the personal characteristics of a sample of financial controllers within Medtronic, to conclude to which extent these findings can be supported or confirmed. I intend to provide necessary insights in relation to the contemporary activities and personal characteristics that could be taken into consideration when designing the future 5-year roadmap for the function in Medtronic.

1.3 Relevance

As markets are evolving rapidly, with the introduction of new technologies, big data and regulatory changes, the finance function is more than ever expected to deliver insight, efficiency, and value to the business.

When management (re)designs the contemporary controllership function, it is important to know which activities are to be combined into coherent roles and to assign tasks to persons to match these to optimize efficiency. The same applies to understanding which personal characteristics and personality traits of controllers would suit the specific roles in order to take both factors into consideration in the recruitment and design process. Building on previous studies, this dissertation contributes to the understanding of the development of the financial controller's role by investigating to what extent the evolution of the role suggested by the literature can be supported or confirmed.

Controllers operate in a complex and changing internal environment characterized by a multitude of stakeholders with divergent interests. Also seen from this perspective, it is interesting to study the process of shaping and filling in the evolved role of the financial controller.

With a recently appointed new global controller and the CEOs newly implemented operating model still having a reverberating effect on the organizational structure, Medtronic is currently going through a strategic change that will shape the way the company, including the controllership function will operate over the next decade. Now, more than ever, is the time to structurally review roles and responsibilities, activities and reshape the controllership function into a strategic business partnering function. I would like to take the opportunity through this MBA thesis to contribute to lay a foundation for the future of the function.

1.4 Structure of the dissertation

After this introductory part, Chapter 2 continues with the literature study where the institutional approach to controllership changes and the evolution of the changing role of the financial controller are described and synthesized. This chapter also discusses controllership activities. Furthermore, an elaboration of the conducted research of influence of personal characteristics on certain coherent combinations of activities and the role is presented. Chapter 3 presents the methodological justification of the conducted research. The methods and techniques used in research and the data collection are discussed. Chapter 4 presents an analysis of the results from where answers on the research questions will be formulated. This eventually accumulates to the conclusion and recommendations laid out in Chapter 5.



2. Literature review

This chapter provides insight in the extant literature regarding the developing role of the financial controller. It serves as a basis component for the development of the further research construct outlined in chapter 3. An essential feature of this theory building is comparing the emerging concept of controllership as business partner and strategists against the extant literature. Therefore, a broad range of both academic as well as professional literature have been consulted and synthesized. Section 2.1 elaborates on the function of the financial controllers and its definition. Subsequently, section 2.2 provides a chronological overview of the contemporary trends in relation to the evolution of the controllership function. Section 2.3 discusses the controller role and provides different author's views on the expected changes of the future role. Section 2.4 and 2.5 focus on activities and tasks of the controller as well as how personal characteristics could be seen as a “trigger” for controllers to perform certain activities in his/her profession, before section 2.6 summarizes and concludes on the extant literature in relation to the objectives set and builds the bridge towards the research construct that is formed in chapter 3.

2.1 The Financial Controller

The financial function is an ambiguous concept which requires further explanation. The terms “management accountant” and “financial controller” are often used interchangeably in contemporary literature and this dissertation. However, despite the profusion of empirical studies, there is still a lot of debate around the definition of the profession and the roles that controllers perform in their organizations.

Sorin-Ciprian (2018) states that “A controller is a person who controls something, especially the finances of a company”. A main function for a controller is the preparation of financial reports that summarize or forecast an organization's financial position. On some occasions, the controller would assist his company's external auditors when they prepare an annual report. The controller would also be responsible for preparing special reports for regulators, governmental agencies, and banks. Generally, the controller oversees a company's accounting function and conducts internal process reviews. In most cases, the controller's reports are prepared for the company's executive management team.” La Paz et al. (2020) state: “The term controller has been used to identify different professionals who analyze data and produce

information to support decision-making processes”. Both above definitions mainly drive the financial controller in an information producing supportive role without a much of business partnering influence.

Albrecht Deyhle, who was the founding father of the International Controller Association developed a concept of *Controlling* that did not specifically define controlling as the job the controllers performs, but rather as the result of the interaction between controllers and managers (Schaffer, 2013). He states that controllers should take the role of the counterpart providing a third-party perspective based on an intimate knowledge of company figures and appropriate tools, like cost accounting, budgeting and investment appraisal. The controller complements a manager who is primarily characterized by his entrepreneurial judgment and his skill in motivating employees. (Schaffer, 2013). Deyhle remains rather vague on the decision-making activity, although he moves the controller in a more independent position with a strong opinion towards management.

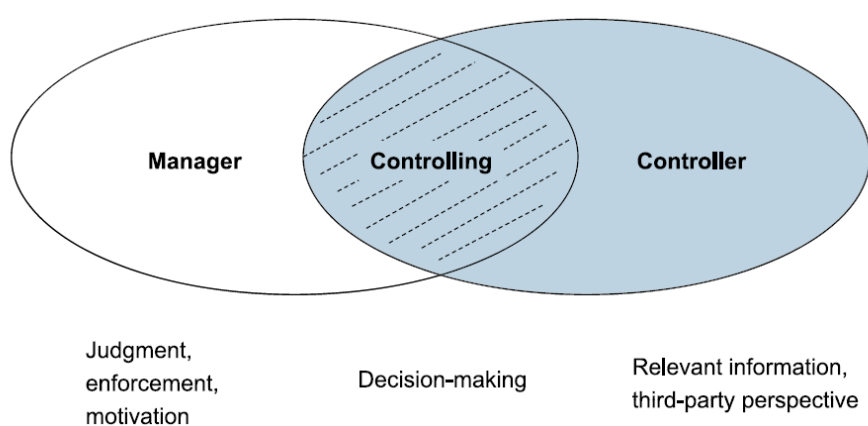


Figure 1: Controlling according to Albrecht Deyhle; Schaffer (2013)

Verstegen et al. (2005) have defined: “A controller supports and advises the management of an organization in reaching its economic, public and/or financial goals. Management includes planning, control and decision making. Support is interpreted in terms of the design and maintenance of accounting information systems and the procurement and distribution of information. This aligns with Conijn & Rouwelaar (2012) who defend that controller at every level in the organization should be less involved in “number crunching” and building reports and get more involved in the managerial decision-making process. They state that this shift would have a positive effect on the personal development of the financial controller as well as the performance of the organization, mainly because the substantive contribution of the

financial expertise in the advice of the controllers to management means that better decisions would be taken.

This leads to the conclusion that under the existing literature there is no unambiguous definition of a financial controller available. A number of authors define the term controller more as an individual mainly concerned with the generation of financial information instead of actually applying that information for management support. This aligns with the definition of “beancounter” (Burns & Baldvinsdottir, 2005). Others provide a perspective in which controllers act more as a “business partner”, (Byrne & Pierce, 2007) in which they are mainly concerned with the application of the information generated to apply in operational decision-making and strategy execution. Knowing that this dissertation is centered around the financial controller and provided for the validity and reliability of this research it would be desirable to have the concept defined, I want to join the definition used in the study of Versteegen et al. (2005) as their definition has been formed on a basis of classification of controller’s activities which will be further used as a basis for further research. The “business partner” role also qualifies as the more emerging role in contemporary literature, although one might ask if this is already a true reality.

Having the general definition of a controller in mind, within Medtronic distinctions are made between corporate controllers who work for headquarters and have a more global and consolidated scope, operating unit controllers being fully focused on business control of a specific operating unit and regional controllers being responsible for one of four geographies. Given the matrix structure of the company, all three work very closely together and they all answer to the definition described above, balancing strategic, operating and financial aspects of control. Nevertheless, it is seen later that the classification has been identified as a trigger in the research construct, as it would be interesting to see whether working as regional, corporate or operating unit controller could predict role membership



2.2 The evolution of Controllership

This section provides an overview of the contemporary trends in relation to the evolution of the management accounting or controller's function. It describes in a chronological way the function has evolved over time and outlines the most relevant contemporary catalysts of the potential emerging role as business partner and even co-strategist.

2.2.1 The early days: Information to resource provider

According to Johnson & Kaplan (1987), management accounting appeared for the first time in the United States during the nineteenth century. During this period, management accounting was developed as a sophisticated craft that provided information for the direct and indirect cost of converting raw material into goods, indirect cost allocation, inventory control, cost comparison, costs for specific decisions, budget, and accountability (Berisha & Asllanaj, 2017).

In the period before 1950, management accounting was a more technical cost accounting activity predominantly oriented towards the determination of product costs. As production technology was simple, producing homogeneous products that consumed relatively fixed amounts of resources as well as identifying the costs of work and material was easy and the processes were driven by the speed of manual operations (Berisha & Asllanaj, 2017). Labor and material costs were easily identifiable, and the manufacturing process was governed by manual operations, later supported by management accounting systems (MAS) developed in the United States. The focus on product costs was complemented with budgeting and financial control of manufacturing processes. By the end of the nineteenth century, new cost measurement such as standard costing and variance analysis of actual cost techniques were developed for analyzing productivity and profit allocation to products. These techniques had significant impact on twentieth century accounting practice (Shah, 2015).

In the period from 1950 to 1980, the main focus of management accountants was to provide information for planning and control purposes. The IFAC described it as "management activity, but in the role of staff" (Berisha & Asllanaj, 2017). It involved supporting line management through use of such technologies as decision analysis and responsibility accounting (Shah, 2015). Since 1950, several management accounting techniques have been introduced which allowed management accounting to be more proactive. Before, the profession had a reactive

character, where problems were only identified after the facts, when deviations from the business plan took place. Techniques developed were discounted cashflow models and Total Quality Management (1950's), Critical path scheduling (1960's), Just-in-time scheduling, Diversification and Product repositioning (1970's) (Shah, 2015).

The stage from 1980-1990, was centered about resource optimization in business processes by eliminating “non/low-value adding activities”, the so called “lean organizations”. Large technological developments and growth of the globalizing economy drove organizations in seeking both cost reduction and quality improvement at the same time, both facilitated by computer-controlled processes and robotic automation in production. In the early 1980's, competition intensified as a result of the world recession and two oil shocks in the early and late 1970's. Technological innovations were imminent, and business uncertainties drove focus to customer and shareholder value creation and organizational innovations which influenced many aspects of the industrial sector. Costs were reduced and quality was improved by the use of robotics and computer-controlled manufacturing processes. In addition, the personal computer emerged, and this changed the nature and amount of data available for managers in organizations. The main challenge was to become efficient in organizing and maintaining that data, transforming it into information and use it through in the management decision process. Management accountants, as main information providers of this information, needed to ensure to deliver the appropriate information through use of process analysis and cost management technologies, to support managers and employees throughout the organization. It needs to be said that until the late 1980's, controllers were very much involved in transaction processing and delivering of information, which gave them the name of “bean-counters” (Burns & Baldvinsdottir, 2005).

2.2.2 Pre-millennium controller: Globalization, IT, and knowledge economy

The discussion about controller's change within the larger organizational context became popular in the late 1980's, especially after Johnson and Kaplan released their book “*Relevance lost: the rise and fall of management accounting*”. Johnson and Kaplan (1987) stated there had not been enough change in management accounting techniques to align the changes in the organizational environment and to support the growing demand for information. They stated that in general organizations were mainly focusing on internal information systems that were designed to meet the needs of external financial reporting requirements. They advocated for the

development of new management accounting techniques to drive more efficient managerial decision making. Several new techniques were developed and introduced in the management accounting profession in the late 1980's and early 1990's. The most influential being activity-based costing, activity-based management (Kaplan & Cooper, 1998) in addition to Japanese inspired cost management techniques such as Kaizen costing (Imai, 2007) and product life cycle management (Cooper & Slagmulder, 2004).

As of the early 1990's, organizations required their controllers to become more efficient in adding value to the company processes and spend less time on transaction processing activities. The worldwide industry continued to face considerable uncertainty and unprecedented advances in manufacturing and information processing technologies (Shah, 2015). The expansion of the worldwide web and corresponding technologies led to the emergence of E-commerce that further increased global competition, with all the associated challenges. The increasing international competition required organizations to draw their attention to development of value through effective use of resources. This was achieved by using techniques which analyzed and mapped the drivers of customer value, shareholder value and organizational innovation (Abdel-Kader & Luther, 2006).

The introduction of the Balanced scorecard by Kaplan and Norton in 1992 widened the vision that the controller fulfills a supporting role in the management of the organization through adequate management information. The scorecard envisioned to maintain a balance between short-term and long-term, between financial and non-financial, and between operational and financial objectives (Kaplan & Norton, 1992). The controller would be in an optimal position to safeguard the coherence of the elements of the control-framework due to its companywide scope. This coherence not only encompasses the management of strategy down to and including the operations, whereby he determines on the basis of a dashboard or balanced scorecard that the strategy has been adequately translated into process indicators, but also whether the manner of reporting and assessment of outcomes leads to the desired behavior and results in the workplace (Conijn & Rouwelaar, 2012).

In the early 1990's, many large organizations opted to set up shared service centers (SSC) in the context of cost savings: initially the new home base for back office and support processes in the fields of treasury, procurement, cash application and other recurring transactional processes. These processes require limited knowledge of the underlying business processes, can

be well described through a standard operating procedure, and do not require detailed analysis. In a later stage however, more complex, and less standardized financial processes were outsourced to SSC's such as accounting and reporting, invoicing and billing including VAT and fixed assets administration. Although the controller remained accountable for the reported financial statements and narratives of periodical movements, the shift of more complex financial processes towards SSCs in the early 2000's resulted in the local or regional controllership function to be able to focus more on value adding activities such as financial planning and analysis and decision-making support activities (Conijn et al., 2003). The introduction of integrated Enterprise Resource Planning (ERP) tools supported standardization of transaction processing systems for interdisciplinary functions and allowed controllers to significantly spend less time on data entry after implementation but more on data analysis and be more involved in the managerial decision-making process (Nawawi et al., 2016). However, studies in the late 1990's showed that only 16% of the finance function activities were driven by managerial and decision support activities whereas 65% remained in transactional processing and 19% in control and risk management (IMA, 1997).

2.2.3 The 21st century: From bean counter to business partner

The new millennium started off with a lot of uncertainty as provided first by the millennium bug and later by a series of events such as the IPO of World-on line (2001), the terrorist attacks at 9/11, the introduction of the Euro (2002), rising dollar exchange rates and other economic headwinds up to the credit crisis in 2008 (Conijn & Rouwelaar, 2012). The millennium issues and the conversion to the Euro led to the renewal of the often-outdated information system and controllers got better at cost efficiency because of the pressurized economy. Organizations got leaner and controllers were required by External Reporting to design a more time efficient period-end close process. Timely delivery of financial reporting was more and more perceived as a quality indicator for the functioning of the finance function (KPMG, 2011).

In the early 21st century, the controller was notified that he needed to become a “business partner” in order to add value and focus on concepts such as Economic value added (EVA), shareholder value and business process redesign (BPR) in order to improve efficiency and support management decision-making. After the turn of the century, the importance of risk management was emphasized by enforced regulations. In 2002, the 107th US congress enacted the Sarbanes-Oxley Act as a reaction to a number of major corporate and accounting scandals, including Enron and WorldCom and required the Securities and Exchange Commission to



create regulations to define how public corporations are to comply with the law (Wikipedia, 2021). It strengthened the position of the controller in supporting the CFO to certify the financial reports and redesign and optimize the effectiveness of internal controls over financial reporting. The European commission shortly followed with a set of guidelines for financial reporting which set high standards to the speed and accuracy of financial reporting of listed companies (KPMG, 2011). The introduction of the International Financial Reporting Standards (IFRS) in 2001 in collaboration with enhanced regulations, turned the attention of financial departments to adjustments in consolidation and reporting systems and processes.

The increased decentralization of the financial function in addition to the added complexity of organizations and the decision-making process resulted in managers to rely more on specialist advice of financial controllers (Rouwelaar, 2011). This development is enhanced through the IT function in relationship to the centrally managed enterprise resource planning systems and financial support systems. Application of IT in controllership was emerging and organizations and professional controllership bodies emphasized on IT having the future to provide information to management to enhance better decision making. Enhancement in centrally managed ERP systems and financial consolidation packages allowed for faster and more thorough analysis of larger amount of data which results in faster and more effective periodical reporting.

2.2.4 The current agenda: Automation, Big data, and Upskilling

Multiple factors including an ever more profound focus on digitalization, environmental sustainability, and certainly Covid-19, have accelerated the urgency for digital finance transformation. Technology is a vital component in ensuring finance functions operate effectively, but many controllers seem on the fence about both its impact on their roles and how they would use emerging technology (Waelter et al., 2018). However, it takes more than technology alone to deliver valuable insights and drive considered decision-taking. The controller has an important role to play, through critical thinking, problem solving and understanding the business (Gibson et al., 2020). The combination of having profound financial knowledge and being able to combine with what is coming to the organization through the other different departments and functional areas is a key element for the contemporary controller as the function serves as a mirror of the core organizational processes that per definition flow

through the different departments. Distilling information into something useful for decision making is only possible when the controller fully understands what is happening throughout the whole organization.

Digital transformation in Controllershship comes with a large shift in the amount of data available compared to the early 21st century (Waelter et al., 2018). The danger lies within infoxication, which is a phenomenon which refers to the difficulty or impossibility of taking considered decisions due to the endless amount of data and context that exist (Savolainen, 2007). Improving and leveraging skills in those emerging technologies that drive business results is key to improve in business partnering (Waelter et al., 2018). However, successful automation through eminent technologies such as Robotics process automation (RPA), Artificial Intelligence (AI) and Cloud computing depends on a reliable, clean data infrastructure that is often a challenge in organizations, especially when companies have been using the same ERP system for decades.

As management of a Finance department, it is imperative to understand the eminent tools and technologies that are ought to transform the finance function, but it is also important to develop and upskill and/or reskill the workforce. To successfully implement a digital finance function, a talented team that is well-versed in business acumen and technological skill is essential (Gibson et al.,2020). It needs analytical skills to gather data and deliver valuable insights, an adaptive mentality to embrace the new technologies to drive the desired outcome and an anticipatory mindset to predict business needs based on trends and analysis in combination with the already earlier existing crucial critical thinking and problem-solving attitudes.

In controllership research conducted by Deloitte (2019), a total of 73.7% of a total of 5400 respondents said emerging technology has a positive impact on finance next to a 67.7% positive perception of the controllership role growing into a business partnering management role. The current digital environment offers opportunities and challenges that, when well-managed, could uplift the role of the financial controller as a crucial resource in making digital finance a reality. While upskilling talent is essential to align the workplace with the technologies of tomorrow, Gibson et al. (2020) state that reframing the finance role to include more nontraditional skill sets can be just as essential to the evolving financial landscape. This means that the trend of automation and disruptive technologies further drive finance professionals and financial controllers to broaden their role into storytellers and more strategic business partners.

2.3 The role of the Financial Controller

The evolving role of the financial controller constitutes the central part of this paper. For this reason, organizational role theory is defined as the essential theoretical framework. Research of Heckman (1988) explains that a central notion in organizational role theory is that people tend to enter in interactions with pre-existing expectations about how others categorized in certain ways are likely to behave. Over time these expectations become widely shared, stabilize into predictable patterns, and evolve into a collective structure of behavior. Role theory asserts that the configuration of roles and positions in an organization is an important determinant of individual behavior, attitude, and performance and these effects on individuals in turn have an impact on the organization. Linking this to accounting, Hopper (1980) finds roles of management accountants linked to three concepts:

- Expectations: what the accountant and others believe he/she should do.
- Behavior: what he/she actually does.
- Structure: how the position of the accountant is linked to others in the organization.

A role is defined as part of a position that consists of recurring activities and actions (Verstegen & de Loo, 2005). The concept of role is an abstraction of the expected, patterned behavior of those in positions. A position is to be viewed as a social structure or location in the organizational space associated with designated rights and obligations, often also called “status”. Bates (1956) expands on this idea when he stated that groups are composed of parts of persons. This means that any individual is likely to occupy several positions in a number of groups. A person can for instance take the role of business leader, husband, and father at the same time.

Role theory asserts that a person could fulfill multiple roles, although there might be role conflict. Role conflict is understood as the simultaneous occurrence of multiple role outputs or requirements, with the performance of one role making the performance on the other more difficult (Katz & Kahn, 1978).



The research in this thesis is based on functional roles that are distinguished based on coherent combinations of activities and therewith link the roles to the activities performed. A search was also performed to authors who use dichotomous characteristics in their role classifications. The advantage of this is the clarity of the use of extremes which can be further used in regression analysis.

The below subsections provide a chronological overview of the most important and frequently referred to controller roles described in academic and professional literature. The list can be considered comprehensive however not exhaustive.

2.3.1 Sathe (1982)

One of the first publications about controllership involvement in management comes from Vijay Sathe, who is seen as foundational in terms of research about controller roles. Sathe describes that a controller has 2 main responsibilities:

Management service: assisting the management team in the business decision making

Financial reporting and internal control: financial information provided must be accurate and the internal control environment should align with organizational procedures.

Taking these responsibilities into account he defined four ideal types of controllers:

1. The involved controller: mainly focuses on management-service responsibility and much less on financial reporting and internal control. The desired behavior is to be actively involved in the business decision-making process.
2. The independent controller: mainly focuses on financial reporting and internal control responsibilities and much less on the management service responsibility. The desired behavior is to act as independent and objective in relation to management.

The main problem identified is that both responsibilities should be fulfilled. Therefore, he defined two more integrated roles where he places an equal emphasis on both responsibilities but differentiates by whether the role should be taken by one or more individuals.

3. The Split controller: in this, the role of the controller is split, and different individuals are assigned to each of the two aforementioned responsibilities.
4. The Strong controller: this individual retains both major responsibilities by placing a strong emphasis on both.

There is a role conflict for the strong controller: a focus on responding to the wishes and needs of the (decentralized) local management versus the focus on reporting for (central) senior management (Veen-Dirks & de Loo, 2011). The extent to which the strong controller is involved is a balancing act between these opposing interests. On the one hand the probability that costs are being made by erroneous reporting and on the other hand the likelihood of costs being made by wrong management decisions. In case a controller becomes more involved in operational decisions, he may lose his integrity and independence and the more likely it is that management exercises pressure on the controller to adjust the reporting figures. This is shown in the cost curve that rises when becoming more involved. On the other hand, in case the controller is independent and mainly focuses on financial reporting and internal control, the business could perceive him as “corporate spy” and deny access to the confidential business information which could lead to less effective decisions. This is shown in the cost curve that decreases when becoming more involved. The cumulated cost curve has a shape of an upward opening parabola where Sathe concludes that one controller who could be at the optimal scenario, being mainly independent but with the right level of involvement would be the most efficient.

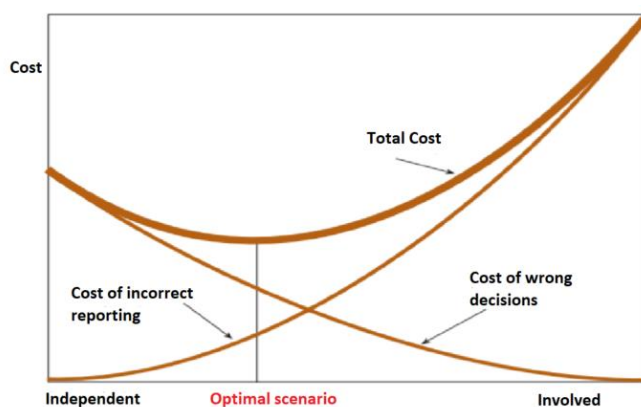


Figure 2: Design of the optimal controllers’ role by Sathe (Rouwelaar, 2007)

2.3.3 Granlund and Lukka (1998)

In research about Finnish management accountants moving towards increasing business orientation, Granlund and Lukka (1998) state that the basic motivation underlying the discussion in literature about the need for change in the role of the financial controller relates to a fear of the collapse of appreciation of the accounting profession. There is a need for

financial controllers to move away from the roles of business historians and company watchdogs towards more commercially oriented functioning. They explain that the peak of the outlined role development would be a situation in which financial controllers operate as true members of management teams and are able to act as change agents in organizations.

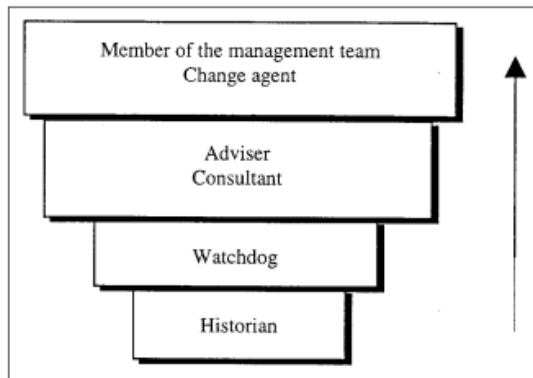


Figure 3: The expansion of the financial controller’s job description (Granlund and Lukka, 1998)

2.3.4 Jablonsky, Barsky (2000) and Riedijk (2002)

Jablonsky and Barsky (2000) describe, based on US research, that financial organizations can be described in terms of two distinct models of financial management: the business advocate and corporate policeman models. In both models, the same set of accounting and finance skill sets are present, but they operate from different mindsets.

Corporate Policeman Model	Business Advocate Model
<ul style="list-style-type: none"> *Control the disclosure of financial information *Be members of an administrative support group *maintain a separate, functional perspective of the business *Enforce compliance with policies and procedures *Provide access to financial information on a "need to know" basis 	<ul style="list-style-type: none"> *Provide financial discipline for the business operations *Be members of the management team *Maintain cross-functional links with other staff functions *Integrate business operations throughout the firm *Provide financial information to managers

The “corporate policeman” has a more retrospective view with a focus on comparing actual realizations against the (often self-developed) norms and maintaining oversight, while the “business advocate” has a more prospective view and maintains a decision supportive and stimulating role towards management (Riedijk et al., 2002). Due to his thorough business acumen, he for instance contributes by thinking on ways how to best go to market and he analyses the risk and financial consequences of these options.



Riedijk et al. (2002) join the classification of Jablonsky and Barsky and states that in general the role and function of the financial controller is moving from “corporate policeman” to “business advocate”. This widened scope is not without any danger. The primary function of the financial controller is still to be a “financial advisor”. The shift towards “business advocate” roles cause increased attention for non-financial knowledge and with that the technical knowledge threatens to fade into the background. To avoid falling short in terms of financial and economic management, Riedijk advocates for the role of “financial advisor”, which would be centrally positioned between the two aforementioned roles. In this role, the controller mainly takes a supportive role where he judges and advises on business alternatives based on financial consequences. The difference with “business advocates” is that the latter also advises management, but with a broader than only a financial perspective.

2.3.5 Verstegen et al. (2007)

Research of Verstegen et al. (2007) centralized around defining the role of the financial controller based upon his activities. Based on literature they have distinguished 37 controllership activities. In addition, they have investigated which factors influence the functioning of controllers and came to a total of 30 so called “triggers”.

Controllers were grouped by clustering a set of coherent activities to them. Activities are a part of a controller’s daily work and are likely to be an element of any classification of controllers (Hopper, 1980; Riedijk et al.,2002; Jablonsky & Barsky, 2000).

A number of factors that directly or indirectly trigger the functioning of controllers and thereby the (coherent combinations of) activities they are likely to perform have been identified through literature. A distinction was made between triggers external for the organization (like market conditions), triggers that are internal for an organization but external for the controller (like style of management) and specific personal characteristics of a controller that may partly be related to one’s background (like being introvert of extravert) (Verstegen et al., 2005).



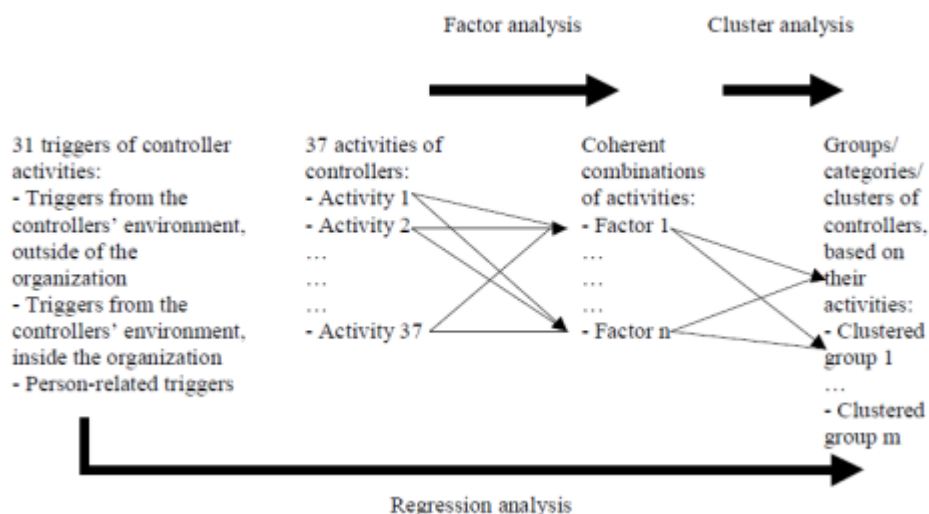


Figure 4: Overview of the research method. (Verstegen et al., 2007)

The main objective of the research can be summarized as follows:

Establishing and describing the relationship between the triggers of controller activities and the group membership of controllers, in which groups are classified by coherent combinations of the foregoing activities

The results of the research were threefold:

1. Based on factor analysis they have subdivided the controllers' activities in five coherent combinations and have labeled them in such a way that they presumably describe the general features of a factor:
 - a. Designing and changing control systems and supporting change processes
 - b. Internal reporting
 - c. External reporting
 - d. Supervising and maintaining accounting information systems; and
 - e. Risk monitoring
2. Based on a cluster analysis, two groups of controllers were distinguished that each emphasized on different clusters of activities: Watchmen and Information Adapters (later called Transformers). Their research showed that 55% of the controllers in the sample could classify as Information Adapters/transformers and 45% as Watchmen.



- Watchmen: This group mainly performs scorekeeping and risk monitoring activities and had a relatively high positive mean factor on factors 4 and 5 and rather low on factors 1, 2 and 3.
- Information Adapters/Transformers: This group acquires, analyzes, and manages information based on organizational needs, focusing on organizational change processes (Sathe, 1982). They have a relatively positive mean factor scores on factors 1 to 3 and rather low on factors 4 and 5.

3. Personal characteristics and elements related to the personal background in finance and accounting indicate whether someone will become a “Watchman” or “Transformer”. I refer to section 2.5 for a more elaborate view.

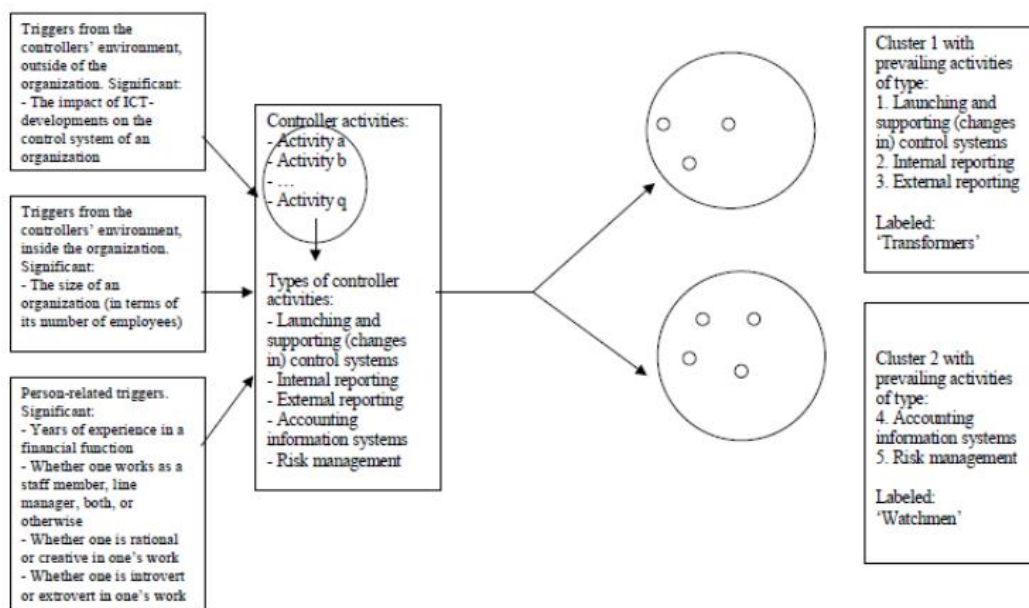


Figure 5: Overview of the research method (Verstegen et al., 2007)

2.3.6 Marshall/Ernst & Young (2008)

Marshall/ Ernst & Young (2008) state that the growing importance of corporate governance (especially after the early 2000's) and investor relations has shifted the focus of the CFO's job. They deem the CFO to be spending an ever-increasing amount of personal time on investors and other external resources and therewith delegating more difficult but stimulating work on

the financial controller, who has become a “Financial Operating Officer”. This encapsulates the day-to-day management of the global finance function, financial planning & analysis, strategy setting, treasury and tax, project work related to mergers & acquisitions and the broader business development agenda.

They distinguish 4 discrete roles for the financial controller but state that they can be performed simultaneously:

1. Commentator – Focus on explaining the numbers.
2. Business partner – Focus on value creation.
3. Scorekeeper – Focus on bookkeeping.
4. Custodian – Focus on governance.

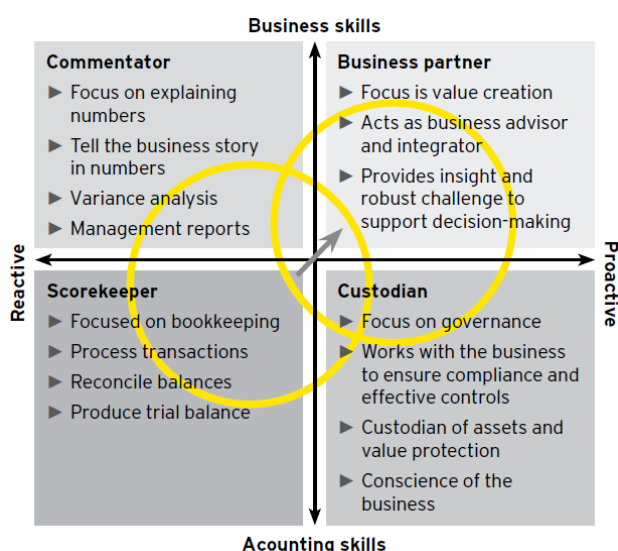


Figure 6: Classification of controller roles on two dimensions (Marshall/Ernst & Young, 2008).

With this classification, it is important to make sure to robustly fulfill the scorekeeper and custodian roles before focusing on more business value-added skills. Finance organizations must ensure that controls and compliance are on top of their list before they work out how to add value to the business (Marshall, 2008). This implies, similar to other studies that a controller should broaden their role, providing opportunity but also being mindful of implications on individual skills, resources and priorities.



2.3.8 Waelter et al. / Deloitte (2017)

In research conducted in the United States by the Institute of Management Accountants (IMA) in collaboration with Deloitte, the conclusion was drawn that controllers spend too little time (31%) on strategic decision-making topics as they are still very occupied with traditional financial closing, reporting and compliance (69%). Due to the lack of time, they were also not often invited to strategic (board) meetings which trapped them into a box of traditional tasks and withheld them from adding strategic business value. Controllers are often seen as predecessor of CFO's (Waelter et al., 2017; Lawson, 2012; Lawson & Webb, 2020), but as they lack time to develop into a strategic business partnering and with that, building the necessary skills, it is not easy once the CFO resigns. Financial controllers are divided in four diverse roles within the organization. When asked what their desired role should be, controllers approximated to spend an equal amount among the four roles.

Family	Role	Actual time spent	Desired time spent
Traditional	Steward: managing risk and preserving assets	40%	26%
Traditional	Operator: running an efficient and effective finance operation	29%	23%
Strategic	Strategist: influencing the future direction of the company	14%	28%
Strategic	Catalyst: helping to drive execution	17%	26%

Based on the assumption that how controllers spend their time largely defines their role in the organization, the researchers classified the respondents in three controllership personas based on the amount of time spent in traditional roles:

- Traditional: spend 75% to 100% in the traditional role.
- Mixed: spend 60% to 74% in the traditional role.
- Strategic: spend less than 60% in the traditional role.

Moving beyond the traditional activities to more a value-adding strategic role accelerated when controllers progressed within the organization to more senior positions and had the strategic part included in their job description. Another conclusion was that controllers in the strategic role were perceived more knowledgeable among C-suite and cross-functional departments, and therefore received much more analysis requests. One of the reasons could have been that controllers in the traditional and mixed roles did not have sufficient business knowledge and therewith were not perceived to be able to provide valuable insights.



2.4 Controlling activities and tasks

There have been very few theory-based approaches aimed at bringing order to the diversity of controller tasks. The literature focuses more on the controlling as a function rather than on the individual tasks of controllers. Like other ambiguities in this field, there currently is no uniform definition of the tasks and responsibilities that a financial controller performs as they are depending on a multitude of factors such as the type of organization, the role he occupies and the controller itself (Sathe, 1982). Also, over the years certain tasks have been added and others are more pushed into the background as they could be for instance automated through technological innovations or even outsourced.

2.4.1 Weber's progressive framework

Weber (2011) developed a comprehensive framework about controller's tasks in relation to management. Tasks are determined by manager's characteristics, and he identified three type of controller tasks: unburdening, complementing and constraining. The first category, unburdening, comprises of tasks delegated by managers to controllers to make sure they are carried out better, faster or more efficient. Managers can identify these tasks and delegate them based on a simple cost-benefit analysis. A large amount of contemporary controller tasks could be found here, for instance variance analysis or reporting and planning activities. Complementing tasks address situations where managers are unable to delegate specific tasks and need an independent counterpart who can shed an independent perspective on their ideas or perform analysis to challenge inappropriate assumptions or to find potential errors. While complementing tasks are based on the assumption of limitations in manager's skills, constraining tasks are focusing on the motivational deficits or opportunistic behavior of managers. Managers could follow personal interest or the interest of the business unit at the expense of the overall corporate performance or compliance. Controllers acting as corporate policeman should not be surprised to find concealed distortions when they challenge managers.

Weber describes four interrelated tasks levels as described in figure 7. The basic task classifies as unburdening and may be characterized as an essential, technical, highly specialized function. As controllers become familiar with the technicalities, they build knowledge and can take additional process-based unburdening tasks on behalf of management in the second level. As

knowledge further accumulates, controllers begin to influence or challenge management from a content perspective where they develop independent opinions and try to persuade management into taking into consideration, trying to prevent identifiable deficits in rationality in advance, but still with the main approach being reactive in nature (Weber, 2011). A fourth level emerges when controllers also assume a proactive role and are finally at “eye level” with managers. Here controllers move beyond the level of management support and take upon significant management tasks. This would also be the maximum development in the controller’s role, as further growth would not be sustainable without actually moving into the management’s role. What the model also implies is that becoming a business partner is hardly achievable at early stages of a controller’s career, when technical knowledge is not at point. Performing certain tasks accumulates knowledge and the development from a merely technical function to a co-management function was possible through proficiency gains and ability to free up time (i.e. through automation or outsourcing of technical or system-related tasks) to work on constraining or proactive management tasks. A question that arises is how the proactive controller should sustain its technical knowledge in a dynamic environment as is currently the case, with technology and financial compliance evolving rapidly. Also, one might ask whether management is in favor of allowing controllers to be influential to the point where the actual decision is being made, without perceiving that *their* job is jeopardized.

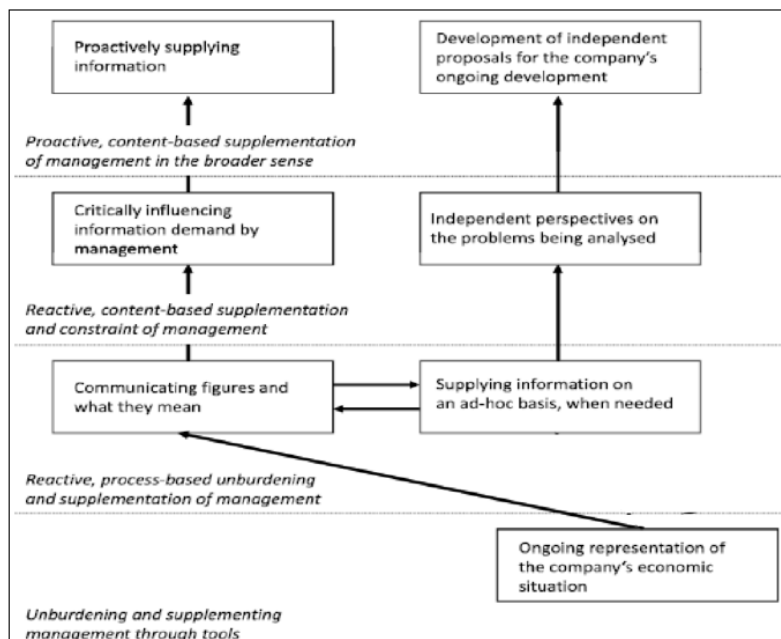


Figure 7: Overview of a model of development for controllership (Weber, 2011).

2.4.2 Verstegen & de Loo's classification of activities

As it is highly probable that classification of controllers can be linked to the activities performed (Katz & Kahn, 1978), Verstegen & de Loo (2005) have developed a list of 37 activities based on literature and in particular classifications of for instance Conijn et al. (2003), Cooper (1996), and Hopper (1980). These authors have mentioned diverse aspects of the controllership profession and Verstegen et al. have reduced these to activities (Verstegen & de Loo, 2005). Where some research articles contained clear descriptions of the activities, others required a translation into activities. Based on factor analysis they have subdivided the controller's activities in five coherent combinations and have labeled them in such a way that they presumably describe the general features of a factor. I refer to section 2.3.5 for the elaboration of this model as parts of this model have been chosen as basis for the methodological research construct of this thesis. The list of 37 activities can be found in appendix E.

2.5 Personality traits of the financial controller

Throughout the years, academic research has suggested a widened role of financial controllers towards business partner as they have been requested to pay more attention to assisting managers in decision making. There are professional publications that suggest how financial controllers, and more in general finance and accounting professionals would demand specific personality traits (Blais, 2000; Lynch, 1999). In research provided by PA Consulting Group, based on a sample of 100 Finance directors of listed FTSE companies, the Hermann Brain dominance model in figure 8 shows more cerebral and left mode thinking processes. These individuals base their decision making upon analytical, logical, quantitative and fact-based characteristics. Becoming a business partner is a fundamental change for finance and accounting professionals, as many of these professionals including financial controllers might have difficulties to develop empathy with more emotional or intuitive colleagues (CIMA, 2006).



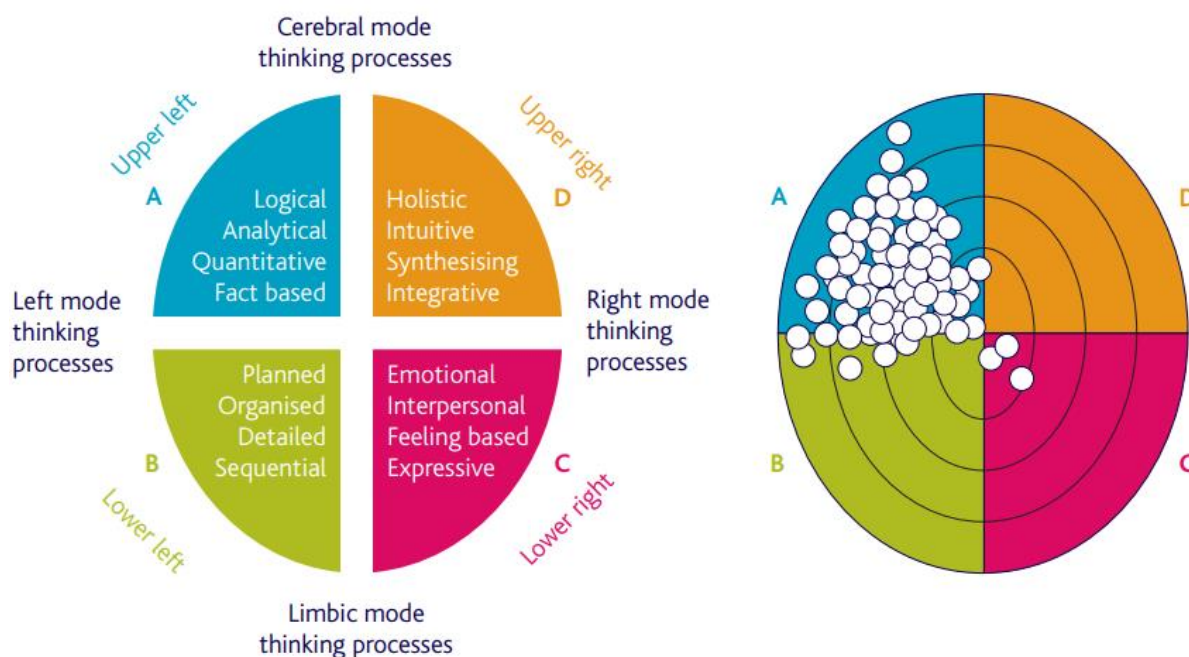


Figure 8: Herrmann brain dominance instrument results

However to date, only very limited amount of academic research has been done regarding personality traits of financial controllers and how they would predict role membership in particular. The findings from various academic studies that do exist remain without conclusion. Verstegen et al. (2007) and de Loo et al. (2011) even share different conclusions about the different roles of management accountants and the personality traits attributed to these roles, while the design of their academic study is widely similar. However, they both conclude that personal characteristics have been statistically identified as the most significant category to predict whether controllers classify as “watchmen” or as “transformer”. Personal characteristics have been identified as “trigger” for controllers to perform certain activities in his/her profession. This perspective will also serve as a basis further used in this research.

Researchers have introduced personality theories which cluster personality traits to several predispositions that are assumed to hold throughout a person’s life, with some slight changes from childhood to adulthood (Soto & John, 2012). The Five Factor (“Big Five”) Model has become one of the most widely used and extensively researched models of personality traits in academic research around organizational psychology (Rouwelaar et al., 2017) and is found to have some correlation to the four scales used in Myers-Briggs Type indicator (MBTI). However, the latter has been criticized as pseudoscience and is not widely endorsed by academic researchers in the field due to poor validity and reliability (Bailey et al., 2018). The

Five factor model states that individual differences can be attributed to one of the following five sets of traits, also described as the OCEAN traits:

Openness to Experience: Consists of the facets of creativity, open to ideas and cultured instead of conservative and more narrow-minded people. Byrne and Pierce (2007) state that when controllers use new, innovative accounting tools in the creation of information and consequently challenge their managers with unexpected advice, they may be granted a larger role in managerial decision-making because their eminence increases. Versteegen & de Loo (2007) have identified creativity as one of the triggers that most contributed to the classification of controllers being “transformer”, aligned with the business partner role.

Conscientiousness: The degree of conscientiousness relates to how committed a person is to reach their objectives at work and includes characters responsibility, goal-orientation and adherence to norms and rules. Mount et al. (1998) state that for jobs that require frequent interactions with others, the level of conscientiousness has positive influence on the job performance. As financial controllers have to deal with a lot of detailed information and figures on a periodical basis, it is expected that they have to be well organized and disciplined to be successful (Rouwelaar et al., 2018).

Extraversion: The degree of extraversion relates to how social, assertive, and positive emotional people are. Usually, extraverts are present in conversations, joyful and like to interact with others. Extravert people are usually better able to express themselves and are expected to influence management or other colleagues to a larger extent. Versteegen & de Loo (2007) have identified extraversion as one of the triggers that contributed significantly to the classification of controllers being “transformer”, aligned with the business partner role.

Agreeableness: The level of agreeableness or likability relates to the degree to which a person is flexible, warm, trusting, tolerant, cooperative and willing to treat another fairly and kindly (Trapmann et al., 2007). People who have high levels of agreeableness tend to value getting along with others by being tolerant and accepting. Financial controllers that have higher levels of agreeableness are expected to have less influence on managerial decisions as they would more easily accept manager’s suggestions as opposed to engaging in discussions (Rouwelaar et al., 2017).



Neuroticism: The degree of neuroticism or emotional stability measures how stable, relaxed, stress tolerant and secure a person feels. People with a high level of neuroticism take difficult situations in an anxious, emotional and irrational way. People who are low in this trait tend to be more stable, emotional resilient and stress tolerant.

Every financial controller is different and has its own set of preferences and vision in executing its role. Personal characteristics have an influence on the role the financial controller fulfills. A number of researchers have studied individual characteristics when defining which role is carried out by financial controllers. Personal characteristics such as the level of technical or business knowledge, communication and IT skills and flexibility help explain the financial controller's role (Byrne & Pierce, 2007). Other characteristics that can be of influence are the level of education or the level of specialism in one's work. This is in line with role theory (Katz & Kahn, 1978) which states that apart from organizational characteristics, interpersonal relationships and personal characteristics determine one's role in an organization.

2.6 Conclusions on the literature

This section summarizes the theoretical research that has been conducted in relation to the 3 objectives of this thesis, described in section 1.2. To answer to the questions how the role of the financial controller has evolved over time, which activities the contemporary controller performs in this role and which personal characteristics and personality traits he or she possesses, all parts of the research questions have been further elaborated and explained.

After some ambiguity, having concluded on a generally accepted definition of financial controller, the evolution of the controllership has been discussed, from the early 1950's throughout the 1990's, over the millennium until this moment in 2022. The discussion about controller's change became popular in the late 1980's after Johnson & Kaplan (1987) stated that there was an emerging need for better controllership techniques to drive managerial decision making. As competition was intensifying, there was an elevated need for the controller to (re)organize processes and make effective use of resources to drive customer and shareholder value and organizational innovation.

Over time, as recurring financial processes were centralized, outsourced and/or automated, controllers got the ability to more often step out of the backwards looking "number crunching" role and perform more forward looking "business partnering" activities to drive effective managerial decision-making and long-term value creation for the organization. However, in the

meantime, accounting scandals led to strengthened regulations and new standardized accounting standards which required the attention of the controller.

Over the last two decades, the increased complexity of organizations and acceleration of IT capabilities made managers rely more on specialist advice of financial controllers. Finance transformation is driven by emerging technologies such as RPA, AI, and Cloud computing. Challenges for contemporary controllers are making sure that the data infrastructure is reliable and organized and up/reskilling the workforce to deliver valuable insights through the maze of data, aligned with emerging business needs.

Based on role theory, we then defined that a role is defined as a part of a position that consists of recurring activities and actions and that a person could fulfill multiple roles, although with potentially a level of role-conflict.

In describing the financial controller’s function, the activity aspect occupies an important aspect, if not the most important (Hopper, 1980). Most of the authors identified multiple characteristics to differentiate between controllership roles. Jablonsky & Barsky (2002) for instance identified the perspective on the timeframe (backwards vs. forward looking) to be a classified as “Business advocate”. To date, controllers have spent significant time gathering and analyzing internal information and reporting the outcomes. The controller is expected to have a more pro-active and forward-looking attitude. However, almost all studies use involvement in a particular set of task or activities to classify controllers according to two or more dichotomous roles.

Author	Controller Roles
Sathe (1982)	Involved - Independent - Split - Strong controller
Granlund and Lukka (1998)	Historian - Watchdog - Consultant - Change agent
Jablonsky and Barsky (2000)	Corporate policeman - Business advocate
Riedijk (2002)	Financial advisor
Verstegen and de Loo (2007)	Watchmen - Transformer
Ernst & Young (2008)	Scorekeeper - Custodian - Commentator- Business partner
Waelter and Kaplan (2017)	Steward - Operator - Strategist - Catalyst (Traditional-Mixed-Strategic)

Table 3: Overview of different controller roles described in this thesis

All of them share the view that there has been a certain movement towards a more business partnering role, where the controller spends less time on recurring and traditional tasks and spend more time on business-oriented tasks and activities. It is crucial to understand that in the evolution of management accounting roles, the later roles are to be seen as an expansion and

include new and broader dimension to the job. The traditional accountant's role of being the 'watchdog' of the organization is expected to remain, too. An important aspect is the connection a controller can identify to differentiate the business support, risk management and control.

However, this "new" role has been on the agenda for over 3 decades and there is ambiguity around the significance of its materialization. A pattern of three potential indications could be identified:

- Controllers still have the accountability over the categories of traditional activities such as running a tight finance operation, managing risk, and preserving assets. As these activities are also subject to continuous evolution through globalization, increased regulation, and automation, it is critical for the controller to be on top it. This often results in a lack of time to develop the necessary skills towards a strategic business partnering role.
- Controllers leaning more towards managerial decision-making activities might risk losing their integrity and independence, as managers ought to exercise pressure to the controller to adjust the reporting figures which is undesired by the broader organization and/or investors.
- As long as there will be ambiguity between the level of business partnering offered by controllers, management will have little demand and credibility of value-add will be low. One may also wonder if managers may accept controller's influence at the stage when a final decision is to be made, as it is perceived as *their* task (Byrne & Pierce, 2007).

An additional contemporary challenge is trying to connect the external market developments with the internal control of the organization through simulations, scenario planning and outcome driven advise. The controller who knows how to make this connection, becomes (or remains to be) a true business partner (Conijn & Rouwelaar, 2012).

In order to support HR departments of organizations to (re)design the contemporary controllership function as an answer to the potential evolved role in the company, it would be helpful to know which personal characteristics and personality traits of controllers would be significantly correlated to coherent combinations of activities performed by controllers.



Verstegen et al. (2005) have identified a number of personal characteristics as triggers for controllers to perform certain activities in his/her profession and the role they fulfill.

The Five Factor Model, as one of the most widely used models of personality trait, states that individual differences can be attributed to a set of five traits or dispositions that are assumed to hold throughout a persons' life, being: openness to experience, conscientiousness, extraversion, agreeableness and neuroticism. These personality traits, in combination with other personal characteristics identified by Verstegen et al. (2005) will be used as triggers in this research.



3. Research methodology

This chapter provides insights in the research construct used. The conceptual model underlying as shown in figure 9 was set up by Verstegen et al. in 2005 and has been adapted to fit the main objective of the research. As further explained in paragraph 3.1 the model focuses on person-related triggers and does not focus on triggers external to the organization and internal to the organization but external to the controller as used in the model of Verstegen.

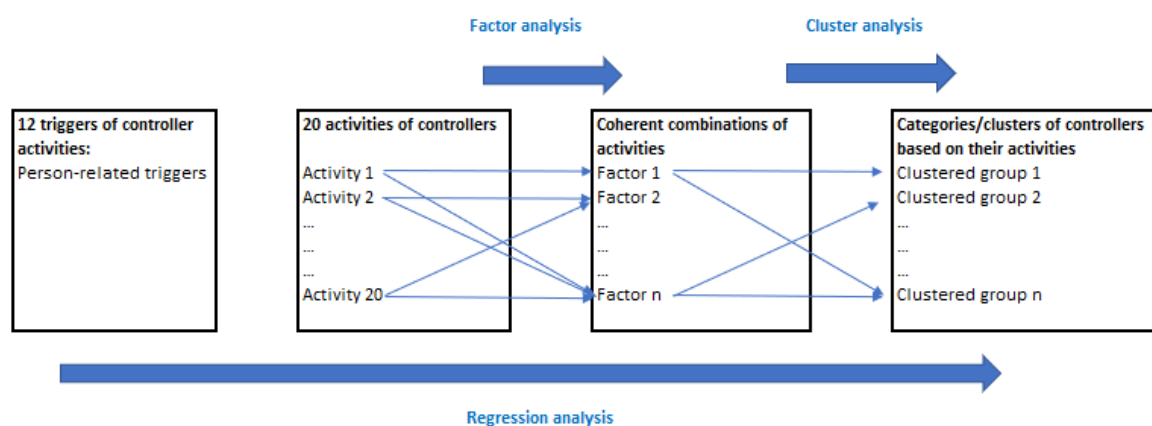


Figure 9: Overview of the research method.

It can be explained as establishing and describing the relationship between the person-related triggers of controllers and group membership of controllers' activities, in which groups are classified by coherent combinations of the foregoing activities. A conceptual and empirical informed framework was developed, which could be refined in future studies.

Derived from this objective and the literature study, we can define three research questions:

1. Which coherent combinations of activities are being performed by controllers in Medtronic?
2. Can controllers be divided in coherent groups based on the combinations of activities?
3. Are there triggers of personal characteristics and/or personality traits that could predict to which classification a controller would belong to?

All of them share the central view that there has been a certain movement towards a more business partnering role, where the controller spends less time on recurring and traditional tasks and spend more time on business-oriented tasks and activities. It is however also an

objective to identify whether in the current controllership organization in Medtronic this movement can actually be seen.

3.1 Person-related triggers

The research in this thesis is based on functional roles that are distinguished based on potential coherent clusters of activities and therewith link the roles to the activities performed. What influences controllers to perform and/or select activities is defined a “trigger” in this research. Triggers are defined as variables that distinguish group membership of a controller. Following Sathe (1982), the model of Verstegen et al. (2005) distinguished between triggers external for the organization of which a controller is part (such as market conditions), triggers that are internal for an organization but external for a controller (such as leadership style, size of the operating unit...) and specific personal characteristics or personality traits of a controller that may partly be related to one’s background. As the research in this thesis will mainly focus on personal characteristics and personality traits of financial controllers within Medtronic, the model has been adapted as such. Therefore, no triggers external to the organization and internal to the organization but external to the controller have been considered and a number of 12 person-related triggers have been identified to be further used in the research.

One can think about a number of possible factors that activates what controllers do (Sathe, 1982). Firstly, a controller may have to possess the capabilities and experience necessarily to perform his activities. Secondly, a controller has to accept the activities he has to carry out in order to feel accountable for them (Brownell, 1981). Therefore, we see personality traits as a likely suspect to have influence on controller activities performed. For instance, extraverted and expressive controllers are expected to fulfill a role that is more often involved in strategical decision-making activities as they would be better suited to express themselves towards management, the board and potentially externals.

Different from Verstegen’s research and as further elaborated in paragraph 2.5, a choice has been made to use the Five Factor model (Big Five) as construct to measure personality traits of controllers in the survey. The meaning and background of this model is further explained in section 2.5 and has been chosen given its higher construct validity in comparison to Meyers Briggs in addition to cost consciousness considerations. The 15-item Big Five Inventory-Short version (BFI-15) has been chosen to be included in the survey as it contains acceptable



psychometric properties. Although a full-scale BFI-44 contains psychometric accuracy advantages, we deem a full BFI-44 in combination with the remainder of the survey not possible given the extended amount of time needed to fulfill the survey. As psychometric literature explains that in research settings in which participant time is limited and where a personality assessment would otherwise not be possible, the BFI-15 offers an adequate construct validity and therefore assessment of personality (Ryser, 2015). Please note that 3 of the official BFI-15 statements have been slightly adjusted/renamed in order to avoid bias in the answers. Asking employees of Medtronic if they are sometimes lazy and worry a lot, might result in a biased negative answer. Therefore, after validating the questionnaire with five independent colleagues, these 2 statements have been changed to reflect a more professional atmosphere. “Worries a lot” has been changed to “can be quite stressful sometimes” and “is sometimes lazy” has been changed to “tends to procrastinate/postpone tasks” as there exists only a vague boundary between procrastination and laziness (Litvinova et al., 2019).

Apart from personality traits, certain personal characteristics such as age, gender, years of experience in the financial/controllership function, job level and type of education have been taken into consideration as a number of them have been noted significant in prediction of controllers group membership in research of Verstegen et al. (2005) and Verstegen et al. (2007) and Bork (2014). For the list of person-related triggers, we refer to appendix B. Triggers 8 to 12 will be tested through the BFI-15 questionnaire on a Likert 7 scale.

3.2 Activities

A role is part of a position that consists of recurring activities and actions (Heckman, 1988). The definition of a controller as seen in the study of Verstegen et al. (2005) has been used, as it was formed on a basis of classification of 37 controller’s activities. Having reviewed the list, it was noted that a large number of activities did not resonate with colleagues in the controllership organization within Medtronic as activities were either too generic or not performed at all. As an example, item 37: *Performing audits in an organization* is not a controllership activity within Medtronic, as there is a clear demarcation for this type of activity by the internal audit function. Therefore, and in addition for validity purposes, a comprehensive list of 20 activities was developed based on five interviews with different cross regional and cross-OU controllership teams. The activities of Verstegen et al. (2005) were provided as base



for inspiration and after explanations the different teams were to think of activities performed that covered more or less the full spectrum of controlling areas. After two weeks, the different lists were combined and accumulated to a total of 20 activities that covered both more traditional activities such as *driving adherence to and updating policies, procedures and internal controls* as well as more (strategic) business partnering activities such as *Partner with the OU/Region in developing new business models, growth strategies and commercial pricing schemes*. Items that were too specific for either a region or operating unit were left out as they were expected to distort the results as being not seen as a homogeneous activity. For the complete list of controllership activities, please refer to appendix A. The activities are taken up in separate survey questions and per the extent to which controllers frequently performed the activity in his/her daily work were measured on a likert-7 scale.

From a reliability perspective, research of Preston & Colman (2000) analyzed the reliability coefficients for test-retest reliability and alpha coefficients for the internal consistency reliability and concluded that reliability increases with growing number of response options, although from 7-point to 11-point, reliability results seemed very similar (Taherdoost, 2019). From a validity perspective, they compared scales with varying numbers of response categories in terms of criterion validity and convergent validity. Their results showed that the scales with relative more response categories (six or more) have higher convergent validity. Altogether, by increasing the numbers of scale points, validity will increase, however, scores from 5-point to 11-point had very similar criterion validity (Taherdoost, 2019). Therefore, I assume that using 7-point Likert scale allows for reliable and valid test-results while allowing a certain level of “ease of use” to the respondent.

3.3 The Questionnaire

The questionnaire took place within the global controllership and finance organization of Medtronic over a period of approximately three weeks from mid-January to early February 2022. As the global controllership organization of Medtronic was targeted, the choice for a digital questionnaire through Microsoft Forms was made. The research is a snapshot of the controllership organization in 2022 and is not part of a longitudinal study. However, it might become the starting point of a series of studies to measure the evolution of the function within the company. In advance of launching the questionnaire through MS Forms, the research was

approved by corporate controllership. The idea of the master's thesis was presented to the global controllership leadership team, with representatives of all 4 regional and 21 OU controllers to request active participation in this survey, as the quantity of data inputs would be crucial for the statistical representation of the research conducted. Additionally, introducing the research objective to the global teams would hopefully also help drive the response rate up. The survey was launched on 18th of January 2022 in EMEA, where it reached 108 potential participants that are in my network. After introducing the survey for the outside-EMEA group, it was launched to the rest of the globe, reaching an additional 418 potential participants, that were not all in my direct network. To mitigate the risk of the global controllership email distribution list being somewhat outdated and people having moved roles in the meantime, it was specifically requested that only employees within the controllership organization would be welcome to participate. The questionnaire was pre-tested by a select group of 4 controllers working in different areas, both from a geography as well as from a matrix orientation perspective. Specifically, this means that the draft questionnaire was shared, and pre-launch feedback was looped back into the final version. The main feedback was to better clarify some of the 20 controllership activities, as some were ambiguous. For the final questionnaire, refer to appendix C.



4. Research results

4.1 Questionnaire response

The research questionnaire has been sent to the global controllership organization of Medtronic. A total of 524 respondents have been addressed through a global distribution list managed by the HR department. As the list is quarterly updated, it might include employees that have moved to non-controllership roles as well as employees that have moved into controllership roles in the last quarter. However, the impact on both sides is estimated to be very limited (<2%). Nevertheless, the email explicitly stated that when the receiver's current role would not be in controllership, they were excused from filling in the questionnaire. We assume that this advice was taken for granted. Two email-reminders were sent to the respective initial recipients after each week that had passed.

As a result, after 3 weeks, 108 employees had completed the survey, equaling 20,6% of the global respondents. However, 65%, a total of 69 out of 106 employees from my direct network in EMEA had completed the survey, for which I am very grateful. In terms of statistics, all 108 responses are complete and valid, without any missing values. Below you can find a brief overview of the respondent's persona, based on the first 7 more generic triggers.

- 52.8% of the respondents are female, 47.2% are male, which proves a fairly balanced gender equality in the function.
- In terms of age, 61.1% of the respondents are older than 40 years, 22.2% age below 35 which shows that a controllership function is usually not a finance-starter's career as quite a lot of people transfer to controllership at a later age and stay until the end of their career, given its diversity of tasks and responsibilities. This also strengthens the assumption that people working in controllership have already gone through potential identity exercises and have moved to a function that fits their personality.
- The controllership function is quite experienced, with 72.3% of the respondents having more than 10 years of experience in finance or controllership and only 12% with less than 5 years, which is in line with the previous observation.



- In terms of education, 38.9% of the respondents have an advanced degree such as an MBA, a CPA or CMA or the national equivalent. 26.9% of the respondents have a bachelor's degree, 26.9% a master's degree while one respondent (or 0.9%) has a PhD.
- From a geographical perspective, 65% of the respondents are located in EMEA, 27% in Americas followed by a minority in Asia Pacific and Greater China, with 6% and respectively 1%. This is also in line with my role as controller with primarily an EMEA focus and quite a limited network in Asia Pac and Greater China.
- In terms of matrix orientation, there is representation from corporate controllership (34%), regional controllership (41%) and Operating unit controllership (25%)
- In terms of Job level, 66% of the respondents are at (Sr.) manager level and up, with 51% at (Sr.) management level, 14% at (Sr.) Director level and 1% at VP level. This also confirms that the function has a significant weight in terms of experience.

4.2 The Five Factor model

The 8th question of the questionnaire presented fifteen short statements about the respondent's personality, starting with "I see myself as someone who...", ranked on a Likert 7 scale from strongly disagree to strongly agree. The 15-item Big Five Inventory-Short version (BFI-15) has been chosen to be included in the survey as it contains acceptable psychometric properties and presents robust and reliable estimations of the Big Five personality construct. The results of the fifteen questions have been recoded in SPSS to arrive at the five respective variables: Openness, Conscientiousness, Extraversion, Agreeableness and Neuroticism. Each of the five traits is represented by three questions and by taking the mean of the outcomes of each three questions (some invertedly recoded) in line with research from Lang et al. (2011) we arrived at a representative score for each of the five personality traits as separate variables.



		Descriptive statistics Five factor model				
		Openness	Conscientiousness	Extraversion	Agreeableness	Neuroticism
N	Valid	108	108	108	108	108
	Missing	0	0	0	0	0
Mean		4,8981	5,1975	4,0741	5,1574	3,3272
Median		5,0000	5,3333	4,3333	5,3333	3,3333
Mode		6,00	6,00	4,67	6,00	2,00
Std. Deviation		1,17472	0,97958	1,40784	1,04961	1,15828
Variance		1,380	0,960	1,982	1,102	1,342
Skewness		-0,636	-0,526	-0,120	-0,494	-0,005
Kurtosis		0,028	0,265	-0,715	0,083	-0,666

Table 5: Descriptive statistics Five factor model

- **Openness:** with a mean of 4.9 it is noted that quite a lot of controllers are open to new ideas, have an innovative mindset and are creative with a standard deviation of 1.18 it is noted that most of the respondents' answers do not deviate far from the mean. The distribution is fairly left skewed which can also be seen as the mode is higher than the median which is higher than the mean. The distribution shows that on the left side about 26% of the respondents answer between 2.67 and 4.67 while on the right side about 25.2% of the respondents answer between 6.00 and 6.33. A low positive correlation (sig. <0.01) with extraversion (0.319) can be identified.
- **Conscientiousness:** with the highest mean of all five factors, amounting to 5.2 it is noted that on average financial controllers in Medtronic are very committed to their work, take up responsibility and are goal oriented. The standard deviation is low with 0.98, meaning the respondents are clustered around the mean. Also, here we can see a left skewed distribution and low value for Kurtosis, meaning a low measure of tailing. The variance of this factor is lowest of all five factors. A low positive correlation (sig. <0.05) with Openness (0.203) was identified.
- **Extraversion:** with a mean of 4.07 and a higher standard deviation of 1.41 controller respondents in Medtronic are not very extroverted but at the same time also not very introverted with a slight left skewed distribution and a mean leaning 0.57 points more to extraversion. However, the variance of 1.982 is high and the kurtosis of -0.715 shows that there are quite some outliers in this distribution. The data shows that 14.8% of respondents score between 1 and 2 which means they are fairly introverted. On the other

hand, one could also see 13% of respondents with scores from 6 to 7 which means they are true extroverts. As mentioned, a low positive correlation (sig. <0.01) with extraversion (0.319) can be identified.

- Agreeableness: with a mean of 5,15 controllers within Medtronic tend to be tolerant, forgiving and accepting others and show conflict avoidance behavior. However, 43.1% of respondents do at least somewhat agree to the statement that they could be sometimes harsh or direct to someone. The standard deviation of 1,05 notes that there is not that much dispersion from the mean. The distribution shows with -0.494 a strong left skewness with low outliers (Kurtosis 0.083). A low negative correlation of -0.252 can be identified (sig. <0.05) between region and agreeableness. “Region” is a categorical variable ranking 1 as Americas, 2 as Asia pacific, 3 as Greater China and 4 as EMEA. This means that controllers in EMEA are show slightly less levels of agreeableness than their American colleagues.
- Neuroticism: with the lowest mean of all five factors amounting to 3.33 controllers score somewhere in the middle of the likert-7 scale. It is also confirmed by the mode being 2 in approximately 15% of the cases. The standard deviation of 1,16 notes that there is not that much dispersion from the mean. There is a low negative correlation of -0.261 with the variable “years of experience” (-0.261) as well as with “age” (-0.258) both with sig.<0.01. This means that the older and more experienced in finance/controllership people get, they become more emotional stable and stress resilient which is in line with recent studies (Carstensen et al., 2011).

Furthermore, a correlation analysis was performed to quantify the degree to which the twelve variables that have been identified as triggers for controllership activities are related. As described above, there were no moderate to high correlations ($R > 0.5$) noted between the Five factor variables or between those and other independent variables. Between the seven more generic variables we noted a strong positive correlation (0.764, sig.<0.01) between age and years of experience which should be no surprise. In addition, we also noted moderately high correlations between age (0.413, sig. <0.01) and job level, and years of experience (0.493, sig.<0.01) and job level as well as between openness to new experiences and extraversion (0.319, sig.<0.01). For the correlation matrix, refer to appendix D.

4.3 Factor analysis

The first step in analyzing the 20 activities as dependent variables is to investigate if there are coherent combinations or groups of activities performed by controllers in Medtronic. This has been done through a factor analysis in SPSS. Factor analysis is a form of data reduction in which a large number of variables are reduced to a smaller number of variables. Factor analysis also examines whether latent variables can be derived from manifest variables and how well the manifest variables fit the latent variables as a starting point. A manifest variable in this case would be the frequency of an individual activity performed by a controller. For example, how often someone supports external auditors in their quest for finding material anomalies in the financial statements. A latent variable would be the frequency of how often a controller is occupied with a correlated combination of individual tasks, for instance “external reporting”. The latent variables should correlate or load on each other. This is called a factor loading. A factor loading describes how a manifest variable contributes to the measurement of a latent concept.

A factor analysis was performed on all 20 controllership activities upon receipt of all input from respondents through the questionnaire. A direct Oblimin rotation was chosen as an expected correlation between the variables was assumed. The data was preliminary assessed for significance through the “Kaiser-Meyer-Olkin measure of sampling adequacy & Bartlett’s test of sphericity” test. (figure 10). The KMO represents the ratio of the squared correlation between variables to the squared partial correlation. As the value moves from 0 closer to 1, this indicates that patterns of correlation are relatively compact and so factor analysis should yield distinct and reliable factors (Field, 2009). With a KMO test value of 0.798 being >0.5 , the sample size is more than sufficient to perform a good statistical factor analysis. Since we are looking for coherent combinations of controller’s activities, Bartlett’s test of sphericity could give an initial indication whether the 20 activity variables are somewhat correlated. If not, then the correlation matrix would have resembled an identity matrix (with the non-diagonal components being zero). With a sig. value $<0,001$ being lower than 0,05 it indicates that there is at least some correlation. All of the activities had communalities higher than 0.3 which allowed all of them to be part of the factor analysis (Table 6).



KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,798
Bartlett's Test of Sphericity	Approx. Chi-Square	1139,269
	df	190
	Sig.	<,001

Figure 10: KMO and Bartlett's Test results

Activity	Communalities	Component				
		1	2	3	4	5
"Analysing and advising about profitability of customers, products and/or services"	0,820	-0,065	0,937	0,015	0,106	-0,080
"Partner with the OU/Region in developing new business models, growth strategies and commercial pricing schemes."	0,748	-0,047	0,894	0,198	-0,087	-0,184
"Maintaining and improving the risk control framework"	0,703	0,279	0,277	-0,302	-0,044	-0,582
Driving adherence to and updating policies, procedures and internal controls.	0,532	0,108	0,048	-0,251	-0,323	-0,473
"Developing and presenting financial reports towards external stakeholders (auditors, tax authorities, shareholders etc.)"	0,627	0,804	-0,067	-0,056	0,076	0,153
"Perform and/or manage financial analysis on technical accounting matters, including complex business transactions and implementation of new accounting standards"	0,804	0,133	-0,196	-0,033	-0,831	-0,119
Driving efficiency through standardization and automation of processes across the Regions/Operating units	0,689	-0,220	-0,029	-0,855	-0,035	-0,058
"Making recommendations to improve organizational control in absence of problems (continuous improvement)"	0,630	0,178	-0,119	-0,673	-0,048	-0,279
"Advising on and providing decision support with regard to cost accounting and/or revenue generating items (e.g. costing of products/services), variance analysis and overheads"	0,721	-0,075	0,156	0,092	-0,817	0,259
Advising and monitoring operational improvements and resource management, including human resources	0,628	0,040	0,518	-0,388	-0,109	0,058
"Advise on accounting treatment for new and current business models and business alternatives."	0,816	0,057	0,049	-0,033	-0,826	-0,179
"Reporting information that aims to provide guidance for the future"	0,387	0,080	0,011	-0,448	-0,196	0,278
"Provide support and report to internal audit, corporate accounting and tax departments"	0,809	0,831	-0,052	0,109	-0,172	-0,095
"Provide support to external auditors and tax authorities"	0,875	0,961	-0,026	0,055	0,049	-0,040
"Maintain and/or oversee the control of accounts and records in the areas of revenues, expenses, disbursements, and other associated balance sheet accounts"	0,463	0,675	-0,015	0,127	-0,064	-0,001
Presenting and reporting of backward looking financial information to internal stakeholders (management, functions, OU's)	0,498	0,379	0,261	-0,236	0,007	0,370
"Supporting global process improvement initiatives (incl. finance digital transformation)"	0,525	0,014	0,114	-0,698	0,089	0,033
"Discussing with (internal and/or external) auditors about changes in the control environment"	0,744	0,714	0,075	-0,128	-0,097	-0,234
"Advising about and development of budgets and budget reporting"	0,708	0,153	0,561	-0,127	-0,128	0,411
"Advising on and evaluating performance measures"	0,739	-0,042	0,645	-0,288	-0,070	0,243
Eigenvalue		6,075	3,318	1,624	1,432	1,017
Initial eigenvalue % of variance		30,376	16,588	8,121	7,159	5,084
Cumulative %		30,376	46,964	55,085	62,244	67,328
Extraction Method: Principal Component Analysis.						

Table 6: Factor analysis outcome, 5 factors

Factors with eigenvalues greater than 1 were retained. Eigenvalues represent the amount of variation explained by a factor and an eigenvalue of 1 represents a substantial amount of variation (Field, 2009). This resulted in a total of five factors. It was opted for to leave low correlations (<0.3) out of the pattern matrix and a scan for multicollinearity or singularity was performed which showed no variables with a correlation coefficient >0.9. Stevens (2002) developed an overview of factor loadings that can be seen as critical values to which loadings can be compared. For a sample size of 100, the loading should be larger than 0,512. Given the use of oblique rotation, the pattern and structure matrix were used to find the content of questions that load onto the same factor, looking at factor loadings that exceed 0.5. Results were quite similar, except for activity “*Driving adherence to and updating policies, procedures and internal controls*”, which didn’t meet the threshold in the pattern matrix with a factor loading of -0.473 but did in the structure matrix with a factor loading of -0.504. Based on professional judgment, it made sense to accept the loading onto factor five as the activity is closely linked to the other activity loading onto the fifth factor.

Strategic consultancy and deployment	
1	Analysing and advising about profitability of customers, products and/or services
2	Partner with the OU/Region in developing new business models, growth strategies and commercial pricing schemes.
3	Advising and monitoring operational improvements and resource management, including human resources
4	Advising about and development of budgets and budget reporting
5	Advising on and evaluating performance measures
Financial consulting and business case analysis	
6	Advise on accounting treatment for new and current business models and business alternatives.
7	Perform and/or manage financial analysis on technical accounting matters, including complex business transactions and implementation of new accounting standards
8	Advising on and providing decision support with regard to cost accounting and/or revenue generating items (e.g. costing of products/services), variance analysis and overheads
Finance operations, internal and external reporting	
9	Provide support and report to internal audit, corporate accounting and tax departments
10	Provide support to external auditors and tax authorities
11	Developing and presenting financial reports towards external stakeholders (auditors, tax authorities, shareholders etc.)
12	Maintain and/or oversee the control of accounts and records in the areas of revenues, expenses, disbursements, and other associated balance sheet accounts
13	Discussing with (internal and/or external) auditors about changes in the control environment
Change management	
14	Driving efficiency through standardization and automation of processes across the Regions/Operating units
15	Making recommendations to improve organizational control in absence of problems (continuous improvement)
16	Supporting global process improvement initiatives (incl. finance digital transformation)
Risk management , compliance and internal control	
17	Maintaining and improving the risk control framework
18	Driving adherence to and updating policies, procedures and internal controls.

Table 7: 5 factors as coherent combinations of activities

Individual factor loadings above 0.5 were used to give weight to the individual activity onto the specific factor. Two activities were left out of the analysis as they both had factor loadings below 0.5 and it didn’t make sense from a professional judgment perspective to link them to

the factor they loaded mostly on. Five new variables were created in SPSS where per factor the factor loading of each individual activity was taken into consideration to determine the weight of that activity onto the respective factor. The five factors were labeled so they could be easily interpreted as the label describes the more generic features of this factor but not all of the nuances. Labeling makes general interpretation and discussion of the factor/activity type within the finance sector more convenient.

These factors were then classified as either strategic or traditional based on professional judgment also taking into consideration previous research from Marshall (2008) and Waelter et al. (2017). Both factors 1 and 4 have been defined as strategic given they are mainly focused around supporting management in advising, supporting, and co-creating the future direction of the company together with the business teams. The term strategic has therefore been chosen to represent the controller business partner that has been discussed in earlier chapters of this thesis. Factors 2, 3 and 5 have been defined as more traditional controllership activities that would link more to the traditional steward and operator roles, managing risk, preserving assets, and running the day-to-day finance operation. A similar result has been found by performing a second factor analysis on the already derived 5 factors.

Number	Family	Label
1	Strategic	Strategic consultancy and deployment
2	Traditional	Financial consulting and business case analysis
3	Traditional	Finance operations, internal and external reporting
4	Strategic	Change management
5	Traditional	Risk management, compliance and internal control

Table 8: factor labels and classification

Based on the above-mentioned classification, 2 new variables were created in SPSS. These were labeled “Traditional activities” and “Strategic activities”.

This section provides an answer to the first research question, which questions which coherent combinations of activities are being performed by controllers in Medtronic. Further discussion and elaboration on this will be provided in Chapter 5.



4.4 Cluster analysis

A hierarchical cluster analysis was shown ineffective to categorize respondents based on the different activity types as the means of both traditional and strategic activities were very close. This resulted in almost all respondents clustering in the same category. Therefore, based on the above analysis and professional judgment, a manual clustering exercise has been performed to develop groups of controllers emphasizing on different clusters of activities (traditional vs strategic). Observing the results of both the variables “traditional activities” and “strategic activities”, we note that in a large number of cases, both activity types go hand in hand as the means of activity frequency for the majority of respondents are quite close, meaning that in those cases, controllers perform both strategic as well as traditional activities to approximately the same extent.

In order to classify controllers as “traditional” or “strategic”, per individual respondent the responses were compared and expressed in percentages of the total. If for instance a respondent scores higher on traditional activities he is more likely to be a traditional controller than a strategic one. The % of traditional vs strategic activities a controller performs in their daily job was calculated. Based on this calculation method, we arrive at a classification of three controller roles:

- **Traditional controller:** when a controller performs more than or equal to 55% traditional activities, he is classified as “traditional controller”. Consequently, he then performs less or equal than 45% of strategic activities. In total 31.48% of respondents classify as traditional controllers.
- **Strategic controller:** when a controller performs more than or equal to 55% strategic activities, he is classified as “strategic controller”. Consequently, he then performs less or equal than 45% of traditional activities. In total 19.44% of respondents classify as strategic controllers.
- **Hybrid controller:** when a controller performs between 46% and 54% of both traditional and strategic activities, he is classified as “Hybrid controller”. In total 49.08% of respondents classify as evolving controllers.

When reperforming this exercise with mean intervals between 41% and 60% for hybrid controllers, we note that the hybrid controller represents 73% of the respondents, with 16% as

traditional and 12% as strategic controllers which confirms that the majority of controllers within Medtronic find a fairly evenly balance between traditional scorekeeping activities and (strategic) business partnering.

For further research, the initial classification methodology to cluster respondents into three type of controller roles will be used. In SPSS each individual role was then coded into a new categorical nominal variable called “controller role”. Traditional controllers were coded as 1, hybrid controllers as 2 and strategic controllers as 3. This classification will be later used in the multinomial logistic regression to analyze if any of the independent variables or triggers will be statistically significant to predict controllers’ group membership.

Respondent	Traditional activities	Strategic activities	% Trad	% Strat	Diff	Type
1	5,17	4,36	54%	46%	8%	Evolving
2	2,23	4,51	33%	67%	-34%	Strategic
3	6,22	4,18	60%	40%	20%	Traditional
4	3,68	4,24	46%	54%	-7%	Evolving
5	3,38	3,52	49%	51%	-2%	Evolving
6	2,81	5,44	34%	66%	-32%	Strategic
7	4,66	4,09	53%	47%	7%	Evolving
...
106	4,69	3,47	57%	43%	15%	Traditional
107	3,01	2,57	54%	46%	8%	Evolving
108	3,01	2,57	54%	46%	8%	Evolving

Table 9: factor labels and classification

This section provides an answer to the second research question, which questions if controllers can be divided in coherent groups based on the combinations of activities. Further discussion and elaboration on this will be provided in Chapter 5.

4.5 Regression analysis

A multinomial logistic regression has been performed to determine which of the 12 triggers were significant in predicting which role a controller belongs to, either traditional, hybrid or strategic. As an extension of a binary logistic regression that can predict the probability of observations falling into one of two clusters of a dichotomous dependent variable depending on one or more independent variables, a multinomial logistic regression allows for more categories of the dependent variable. Like binary, it uses maximum likelihood estimation to evaluate the probability of categorical membership (Starkweather & Moske, 2011). Because in this case there are three outcome categories, the analysis consists out of two comparisons. The analysis has been developed in a way the results are measured against the traditional controller

as baseline (i.e., hybrid vs traditional and strategic vs traditional). Firstly, the variables were tested on multicollinearity, which showed none of the collinearity tolerances were below <0.1 and none of the VIF statistics showed values greater than 10, which would both be indicators for issues of collinearity (Field, 2009).

The likelihood ratio test table serves as a general statistic that notes which predictors significantly allow to predict the outcome category. It however does not show the direction and size of the effect yet. There is only one triggers that are significant in predicting to which controller role a person belongs, being the job level with a 95% confidence interval. Given the limited number of respondents and the desire to conclude something meaningful with this research, a 90% confidence interval rate was accepted for this analysis going forward. In case of the latter, there are three triggers found significant in predicting a controllers’ role, being job level, education level and regional orientation.

Likelihood Ratio tests				
Effect	Model fitting criteria -2 Log likelihood of reduced model	Likelihood Ratio Tests		
		Chi-Square	df	Sig.
Intercept	191,147	0,261	2	0,878
Age	190,986	0,100	2	0,951
Gender	192,322	1,436	2	0,488
Years of experience	192,234	1,348	2	0,510
Education level	195,873	4,987	2	0,083
Job level	198,203	7,317	2	0,026
Neuroticism	192,299	1,413	2	0,493
Agreeableness	191,011	0,125	2	0,939
Extraversion	192,829	1,943	2	0,378
Openness	194,594	3,707	2	0,157
Conscientiousness	192,961	2,075	2	0,354
Region	195,766	4,880	2	0,087
Matrix orientation	191,973	1,087	2	0,581

Table 10: Likelihood ratio tests of the multinomial logistic regression

To be able to tell what exactly the effect of each of the dependent variables is, we have to look at the individual parameter estimates. These are shown in table 11 below. The table has been divided into two parts as the parameters compare pairs of the three outcome categories. As noted above, the “traditional controller” category has been specified as the reference category to which “Hybrid controller” has been compared in the upper part of table 11 as well

as to “strategic controller” in the lower part of the table. In case of hybrid controller one significant predictor variable has been identified:

- Openness to new experiences: whether a controller is creative, open to new ideas and cultured instead of conservative significantly predict whether a controller classifies as a hybrid controller instead of a traditional controller. $b=0.424$, Wald $\chi^2(1) = 3.505$, $p<0.1$. The beta coefficient clarifies that as the variable increases with one unit, the change in log odds of being a hybrid controller is .424. In short, controllers that are more open to new experiences are more likely to classify as hybrid controllers rather than traditional ones. As an example, all things equal, a controller that scores 5 out of 7 on openness to new experiences on a Likert scale, is 0.848 times more likely to classify as hybrid controller than a controller that scores 3 out of 7 on that same Likert scale.
- No other independent variables have been found significant in predicting controllers to classify as hybrid controller as opposed to traditional controllers.

The lower part of table 11 compares the outcome for strategic controllers against the reference category. Three triggers have been found significant in predicting controller group membership:

- Job level: The job level that controllers are currently in have been found significant in predicting whether a controller classifies as a strategic controller as opposed to a traditional controller. $b=1.392$, Wald $\chi^2(1)= 6.295$, $p<0.05$. When controllers increase to the next job level, they are 1.392 times more likely to classify into a strategic controllership role. This is in line with Weber (2011) who states that becoming a business partner controller is hardly achievable at early stages of a controller’s career.
- Education level: The education level has been found significant in predicting whether a controller classifies as a strategic controller as opposed to a traditional controller. $b=0.777$, Wald $\chi^2(1) = 3.507$, $p<0.05$. This means that when controllers increase in education level, they are 0.777 times more likely to classify into a strategic controllership role.



- Region: The regional geography level has been found significant in predicting whether a controller classifies as a strategic controller as opposed to a traditional controller. $b=-0.545$, Wald $X^2(1)=2.813$, $p<0.01$. Note that the codification used is as follows: 1 to 4 represent controllers from respectively Americas, Asia Pacific, Greater China and EMEA. This implies that controllers located in EMEA are 2.331 times more likely to classify into a strategic controllership role.
- No other independent variables have been found significant in predicting controllers to classify as strategic controller as opposed to traditional controllers.

This section provides an answer to the third research question, which questions whether there are triggers of personal characteristics and/or personality traits that could predict to which classification a controller in Medtronic would belong. Further discussion and elaboration on this will be provided in Chapter 5.



Controller_role ^a		B	Std. Error	Wald	df	Sig.	Exp(B)	90% Confidence	
								Lower Bound	Upper Bound
Hybrid	Intercept	-0,143	2,863	0,002	1	0,960			
	Age	0,010	0,339	0,001	1	0,977	1,010	0,579	1,763
	Years of experience	-0,375	0,399	0,884	1	0,347	0,687	0,357	1,324
	Education level	-0,140	0,276	0,259	1	0,611	0,869	0,552	1,368
	Job level	0,595	0,376	2,498	1	0,114	1,813	0,976	3,368
	Neuroticism	0,257	0,218	1,385	1	0,239	1,293	0,903	1,851
	Agreeableness	0,048	0,247	0,038	1	0,845	1,049	0,699	1,574
	Extraversion	0,117	0,188	0,387	1	0,534	1,124	0,825	1,533
	Openness	0,424	0,226	3,507	1	0,061	1,528	1,053	2,217
	Conscientiousness	-0,402	0,288	1,953	1	0,162	0,669	0,417	1,074
	Gender	-0,391	0,542	0,521	1	0,470	0,676	0,277	1,649
	Region	-0,054	0,197	0,074	1	0,786	0,948	0,685	1,311
	Matrix orientation	0,102	0,335	0,093	1	0,761	1,107	0,638	1,921
Strategic	Intercept	-1,819	3,866	0,221	1	0,638			
	Age	0,129	0,446	0,084	1	0,772	1,138	0,546	2,368
	Years of experience	-0,514	0,485	1,119	1	0,290	0,598	0,269	1,330
	Education level	0,777	0,373	4,347	1	0,037	0,460	0,249	0,849
	Job level	1,392	0,555	6,295	1	0,012	4,024	1,615	10,026
	Neuroticism	0,160	0,299	0,287	1	0,592	1,174	0,718	1,920
	Agreeableness	-0,053	0,316	0,028	1	0,866	0,948	0,564	1,595
	Extraversion	0,365	0,266	1,885	1	0,170	1,440	0,930	2,229
	Openness	0,222	0,307	0,524	1	0,469	1,249	0,754	2,069
	Conscientiousness	-0,228	0,362	0,398	1	0,528	0,796	0,439	1,444
	Gender	-0,840	0,713	1,388	1	0,239	0,432	0,134	1,395
	Region	0,545	0,325	2,813	1	0,093	1,725	1,011	2,945
	Matrix orientation	-0,319	0,436	0,534	1	0,465	0,727	0,355	1,490

a. The reference category is: Traditional.

Table 11: Multinomial logistic regression parameter estimates



5. Conclusion, recommendations, and limitations

In the beginning of this dissertation, we learned that financial controllers are expected to pivot from processing transactions, ensuring accounting compliance and reporting towards a more business partnering role, where they would help driving profitable growth, process and cost optimization through strategic support. However, literature has shown that this move has been on the agenda for multiple decades and has never been unambiguously proven to really have occurred. The idea was through this research to investigate whether in the controllership organization of Medtronic a situation could be observed that aligns with contemporary literature, showing a significant part of controllers occupying strategic business partnering roles. Roles have been defined based on coherent combinations of activities. Former research has shown that certain personal characteristics and personality traits have been proven to be significant in predicting which coherent combination of activities a controller would more likely perform and therefore in which role he/she would occupy. Therefore, one of the objectives of this research was to test whether a situation as described in contemporary literature could be shown, and which triggers could be significant. Those personal characteristics or personality traits would then serve as input for further discussions and research by the HR department and could potentially be used in future recruitment strategies. The Five Factor model, as one of the most widely used models for personality traits, has been used as triggers in this research. The below and final part of this thesis consists out of three parts. It starts with formulation of an answer on the different research questions, followed by further synthesis and recommendations in relation to current situation in Medtronic, concluding by the limitations of this particular research.

5.1 Answers to the research questions

By use of the results of the research questionnaire analysis, an answer can be provided to the three research questions and form an overall conclusion about the current situation in the controllership organization of Medtronic in relation to the potential evolution to the controller role.

1. Which coherent combinations of activities are being performed by controllers in Medtronic?

A comprehensive list of 20 controllership activities was composed based on five interviews with different regional and operating unit controllership teams. These activities cover more or less the full spectrum of controlling activities performed in Medtronic, including a wide range

of both traditional as well as (strategic) business partnering-like activities. Through a factor analysis with a direct oblimin rotation, given an expected correlation between the activities, we found that they could be reduced to five factors representing coherent combinations of activities. These factors were labeled to describe the generic features of the activity cluster. In a next step, these five factors were defined as either strategic or traditional type of activities based on professional judgment and in line with previous literature. Refer to table 8 for the final classification. We can therefore conclude that based on the sample data used, controllers' activities may be classified into five coherent combinations of activities which they more or less on a regular basis perform in practice.

2. Can controllers be divided in coherent groups based on the combinations of activities?

Based on a cluster analysis we arrived at three categories of controller roles that each are represented by a group of controllers approximately performing similar activities. Approximately 31% of controllers still classify as the traditional type, mainly performing traditional controllership activities. Only 19% classifies as strategic controllers, who perform more than 55% of the more strategically classified activities in close collaboration with business management. Almost 50% of controllers however classifies as hybrid controllers, who in their role take up on average an equal amount of both activities at the same time, resembling Sathe's (1982) strong controller.

3. Are there triggers of personal characteristics and/or personality traits that could predict to which classification a controller would belong to?

In terms of Big 5 personality traits, little evidence has been developed from this research that could support the research question positively and any further recommendations. The results show that controllers who score high on personality trait "openness to new experiences" are significantly more likely to classify as hybrid controllers as opposed to traditional controllers. This is in line with Byrne and Pierce (2007) and Verstegen et al. (2007) who both state that controllers who apply a creative mindset in their work may be granted a more eminent role in managerial decision making and would therefore often classify as business partners.

In addition, it was noted that employees with higher job levels and with higher education are more likely to classify as strategic compared to traditional controllers. Next to this, results show that education level can also be a positive predictor for controllers taking up a more

strategic business partnering role. Job level and education level are also mildly positive correlated. Both outcomes imply that at a higher level in the organization, where colleagues tend to have enjoyed higher education, the importance of controllers becoming strategic business partnering finds its way to the agenda more than in lower levels, an observation that does not come as a surprise given the top-down strategy development and deployment approach of the company. Being an American company with most of the senior management located in the US, is it remarkable to identify controllers in the EMEA region to classify more likely as strategic than their colleagues in the US. However, given the limited response rate of American colleagues, there might be some bias in the data as ideally an even distribution of respondent types would be compared.

5.2 The road to Business partnership

We have learned from this research that within the controllership organization of Medtronic controllers haven't yet fully evolved into business partnering roles. A prevalence of Hybrid controllers can be observed, who seem to efficiently balance both traditional and business partnering activities in the daily routine. Only a limited number of controllers can be labeled to be in a true business partnering role and still an even larger number of respondents classify as traditional controllers who spend significantly more time on activities such risk management, internal control and reporting rather than strategic business partnering, change management and service-oriented activities. The findings are quite in line with the general conclusion of the scientific and professional literature which state that there has been a certain expansion for controllers towards business partnering but no significant movement has actually happened. It might have been overly simplistic to assume that the true transition into business partnering roles had already occurred, for a couple of reasons specific to Medtronic.

A global 5-year finance transformation program has been launched in 2018 that consists of a multitude of projects to restructure the finance organization, including controllership. One of the main objectives of this program is to overcome finance to be tied-up with transaction processing and allowing them to add value by providing valuable insights to the business. Operationally this translates into standardization, centralization, and partial outsourcing of certain more traditional tasks such as reporting to internal and external stakeholders. However, the pandemic situation in addition to underperformance of the third-party outsourcing firm have caused the program efficiency and effectiveness to slow down, leaving



finance and controllership teams still with a significant amount of transactional work that prevents them from truly becoming business partners in the short term. The idea of having more time to work on value-added activities has not yet materialized. We have learned that automating as well as outsourcing activities is hard work in a complex company such as Medtronic, as processes need to be dummy proof before the transition will be successful.

The journey to transform the controllership function into strategic business partner within Medtronic has merely been a controllership discussion and has never been clearly mapped. When in 2018 the finance transformation program was launched, controllership as a function was still quite premature, with regional controllership just recently being developed without clear roles and responsibilities. The function went from crawling through walking to running in a rapid pace, however lacking a true multi-year roadmap towards business partnership. The transformation was supposed to happen overnight and even now, when discussing the topic with senior leadership, there are no clear answers to what still needs to happen and how to go there. Very few can even clearly describe what a true business partner is, what is expected from him or her and how one can measure if he/she is doing well. There should be a clear path towards the objective, with alignment throughout the whole organization and a clear focus on the need and want of the business.

One could truly ask himself to which extent could a controller fully step away from the more traditional activities. With the finance world becoming more and more complex through automation, big data and artificial intelligence, Medtronic internally evolving in terms of operating model deployment and with external parties such as governments strengthening their controls resulting in additional compliance matters, there is still a need to focus on the basics. Traditional activities remain an important part of a controller's everyday work and are also subject to change due to internal and external influences. Combining both duties is difficult, as the hybrid controller must be independent when reporting and involved when exercising the business partnering role, a balancing act that is still under scrutiny.

Therefore, in redesigning the controllership function, one should consider maintaining teams of controllers who still are corporate policemen, who stop the business in their opportunistic thinking, often leading into accounting that contain few shades of grey. These individuals would provide the necessary insights in terms of accounting advise, financial analysis and objectively look at the financial statements, including management reporting, without any



P&L responsibility. They would support the finance managers in running a smooth day-to-day finance operation and provide the necessary support to internal and external stakeholders in terms of reporting deliverables. They would also ensure compliance to internal policies and regulatory bodies and be responsible for the internal control framework in addition to ensuring proper outsourced services management. They can definitely think with the business and be of value to them, but their primary focus is to maintain or develop a good controllership foundation, focused on the more traditional activities. If in the future more of these traditional activities are covered by automation and AI, the number of colleagues in these teams could potentially decrease, but there will always be a team needed to manage change, both internally and externally. On the other hand, the company should consider developing true business partner controllership teams, even potentially reporting dotted line into the business manager. These team members should be working closely together with individuals from the business and have a more facilitating role, at first. In composing and shaping this team, it is imperative to focus on the needs and wants first to overcome positioning the team in a way which might not add value and eventually be perceived as redundant or burdening. In addition, this type of controller would potentially need to develop a different skillset than the current traditional or hybrid controller. For instance, by using their profound analytical skills in combination to being creative and open to new ideas, this controller can turn data into valuable insights that could drive considered business decisions. With big data, automation and artificial intelligence tools rising, there is an opportunity for the controller business partner to partner with IT to learn how to most efficiently use these tools. This proposal aligns with Sathe's (1982) movement from strong controller, who emphasizes on both traditional as well as strategic activities, to a split controller, in which individuals are assigned to each of the two aforementioned responsibilities. It is recommended to make the above part of an extended finance or controllership transformation program, where this research could be used for as a starting point. It is therefore also recommended to reperform similar research which focuses on the personal characteristics and personality traits as role-predicting triggers after a significant transition into controller business partnering has occurred.

The outcome of this thesis will be used to start further discussions with senior leadership on the road to strategic partnership in controlling and will be presented in the next quarterly global controllership meeting as well as in future finance transformation strategy session.

5.3 Limitations and suggestions for further research

Every study has limitations which provide opportunities for further research. Three key limitations to this research have been identified:

- Limited sample size – The research is based on a questionnaire returning responses of 108 participants. However statistically sufficient at first, when clustering these 108 respondents into three controller roles, it showed to be difficult to find statistically significant role predictor variables or triggers given the relatively small sample size. Also, the lower response rate from participants outside EMEA provide rather limited insights in the situation in other geographical areas, especially in Asia Pacific and Greater China where cultural differences might come into play. Additional research by a controller in each of these regions would develop insights that could add to the global picture. The researcher however fully exploited his professional network in the company and to optimize the response rate
- Time frame – The research has been performed over a time frame of a few months, given the time constraint to graduate from the MBA in academic year 2022. To evaluate a true evolution of the controllership organization in the company, longitudinal research would have been a better choice. However, the above could serve as a starting point for further research. Given the function is still fully amidst the finance transformation journey, it would be an interesting fact to study the outcome of the transformation in a few years.
- The research has not focused on the institutional drivers in relation to the business partner ideal. In depth qualitative research at multiple levels throughout the organization, including non-financial top management, could have resulted in a landscape of regulative (have to), normative (ought to) and cognitive drivers (want to) both facilitating and impeding the business partner journey. Having had this understanding would have brought a more complete understanding of the function's current situation and could have served as a starting point for designing the future roadmap. For instance, the board could have different expectations towards controllers than assumed by business management. Also, certain controllers might not have the ambition or desire to broaden their role and take up more financial and business advisory activities.



Appendices

Appendix A: list of 20 controllership activities

1. Analyzing and advising about profitability of customers, products and/or services
2. Partner with the OU/Region in developing new business models, growth strategies and commercial pricing schemes.
3. Advise on accounting treatment for new and current business models and business alternatives.
4. Advising and supporting at potential mergers, acquisitions, or investments in new assets
5. Maintaining and improving the risk control framework
6. Driving adherence to and updating policies, procedures and internal controls.
7. Provide support and report to internal audit, corporate accounting and tax departments
8. Provide support to external auditors and tax authorities
9. Developing and presenting financial reports towards external stakeholders (auditors, tax authorities, shareholders etc.)
10. Perform and/or manage financial analysis on technical accounting matters, including complex business transactions and implementation of new accounting standards
11. Maintain and/or oversee the control of accounts and records in the areas of revenues, expenses, disbursements, and other associated balance sheet accounts
12. Presenting and reporting of backward-looking financial information to internal stakeholders (management, functions, OU's)
13. Driving efficiency through standardizing and automation of processes across the Regions/Operating units
14. Making recommendations to improve organizational control in absence of problems (continuous improvement)
15. Supporting global process improvement initiatives (incl. finance transformation)
16. Discussing with (internal and/or external) auditors about changes in the control environment
17. Advising on and providing decision support with regard to cost accounting and/or revenue generating items (e.g., costing of products/services), variance analysis and overheads
18. Advising and monitoring operational improvements and resource management, including human resources
19. Advising about and development of budgets and budget reporting
20. Advising on and evaluating performance measures

Appendix B: 12 Person-related triggers

1. One's age
2. One's gender
3. Years of experience in a financial/controllership function
4. Geographic location of the current role
5. Matrix orientation
6. Highest level of education
7. Job level in the organization
8. Level of extraversion
9. Level of conscientiousness
10. Level of openness to new experiences
11. Level of neuroticism
12. Level of agreeableness



Appendix C: Research questionnaire

The developing role of the financial controller - MBA thesis questionnaire

The survey will take approximately 7 minutes to complete.

Thank you for participating in this MBA thesis questionnaire regarding evolving activities and personal characteristics in the controllership function within Medtronic. Please note that the questionnaire will only be used for internal research purposes. Thank you in advance for your participation.

1. What is your age?

- Below 35
- Between 35 and 40
- Between 40 and 50
- Between 50 and 60
- Above 60

2. What is your gender?

- Male
- Female

3. How many years of experience in a controllership function do you have?

- Less than 1
- Between 1 and 5
- Between 5 and 10 years
- Between 10 and 15 years
- More than 15 years



4. In which region are you located?

- Americas
- Asia Pacific
- Greater China
- EMEA

5. To which part of the matrix does your current role mostly belong to?

- OU controllership
- Regional controllership
- Corporate Controllership

6. What is your highest level of completed education?

- High school or GED
- Some college but no degree
- Bachelor's degree (Undergraduate degree)
- Master's degree (Graduate degree)
- Advanced degree (CPA, CMA, MBA...)
- Doctoral degree

7. To which job level does your current role belong?

- Vice president and above
- (Sr.) Director - (Sr.) Program Director - Advisor/strategist
- (Sr.) Manager - (Sr.) Program Manager - (Sr.) Principal
- (Sr.) Analyst - (Sr.) Accountant - (Sr.) Specialist
- Associate analyst/accountant/specialist



8. This question is about your personality. Below you see a number of statements, each of which starts with "I see myself as someone who...". For each statement, please indicate how much you agree with it, ranging from "Strongly disagree" to "Strongly agree". Here it goes.

I see myself as someone who...

	Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
can be quite stressful sometimes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
often comes up with new ideas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
can sometimes be direct/harsh to others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
always does a thorough job	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
has a forgiving nature	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
is reserved	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
gets nervous easily	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
tends to procrastinate/postpone certain tasks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
has an active imagination	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
remains calm in tense situations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
is talkative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



	Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
is considerate and kind to almost everyone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
is outgoing, sociable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Value artistic, aesthetic experiences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
works very efficiently	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. This question is about your daily activity in your current role. The list is limited to 20 activities and is not exhaustive, and it is quite possible that certain items look a bit similar or overlap at first glance. However, consider each item as a new item separate from all previous ones. Please indicate on a likert-7 scale ranging from "never" to "all the time", for each item to which extent you are on average engaged in the activity-type. Consider these tasks as your teams' tasks.

	Never	Rarely	Occasionally	Sometimes	Frequently	Usually	Daily
Analyzing and advising about profitability of customers, products and/or services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Partner with the OU/Region in developing new business models, growth strategies and commercial pricing schemes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maintaining and improving the risk control framework	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Driving adherence to and updating policies, procedures and internal controls.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Never Rarely Occasionally Sometimes Frequently Usually Daily

	Never	Rarely	Occasionally	Sometimes	Frequently	Usually	Daily
Developing and presenting financial reports towards external stakeholders (auditors, tax authorities, shareholders etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Perform and/or manage financial analysis on technical accounting matters, including complex business transactions and implementation of new accounting standards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Driving efficiency through standardization and automation of processes across the Regions/Operating units	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Making recommendations to improve organizational control in absence of problems (continuous improvement)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Advising on and providing decision support with regard to cost accounting and/or revenue generating items (e.g., costing of products/services), variance analysis and overheads	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Advising and monitoring operational improvements and resource management, including human resources	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Advise on accounting treatment for new and current business models and business alternatives.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reporting information that aims to provide guidance for the future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Never Rarely Occasionally Sometimes Frequently Usually Daily

Provide support and report to internal audit, corporate accounting and tax departments.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Provide support to external auditors and tax authorities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maintain and/or oversee the control of accounts and records in the areas of revenues, expenses, disbursements, and other associated balance sheet accounts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Presenting and reporting of backward looking financial information to internal stakeholders (management, functions, OU's)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supporting global process improvement initiatives (incl. finance digital transformation)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Discussing with (internal and/or external) auditors about changes in the control environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Advising about and development of budgets and budget reporting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Advising on and evaluating performance measures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Appendix D: Correlation matrix of independent variables

		Correlations											
		Neuroticism	Agreeableness	Extraversion	Openness	Conscientiousness	Age	Gender	Years of experience	Region	Matrix orientation	Education level	Job level
Neuroticism	Pearson Correlation	1	-0,101	-0,139	-0,139	-0,122	-,258**	0,038	-,261**	-0,096	-0,049	0,027	-0,129
	Sig. (2-tailed)		0,299	0,153	0,153	0,210	0,007	0,697	0,006	0,322	0,613	0,783	0,183
	N	108	108	108	108	108	108	108	108	108	108	108	108
Agreeableness	Pearson Correlation	-0,101	1	0,136	0,151	0,093	0,014	0,060	-0,018	-,252**	0,067	-0,028	0,069
	Sig. (2-tailed)	0,299		0,160	0,118	0,340	0,882	0,540	0,853	0,008	0,488	0,771	0,475
	N	108	108	108	108	108	108	108	108	108	108	108	108
Extraversion	Pearson Correlation	-0,139	0,136	1	,319**	0,159	-0,104	0,028	-0,141	0,097	-0,055	-0,002	-0,087
	Sig. (2-tailed)	0,153	0,160		0,001	0,099	0,283	0,774	0,145	0,318	0,573	0,986	0,373
	N	108	108	108	108	108	108	108	108	108	108	108	108
Openness	Pearson Correlation	-0,139	0,151	,319**	1	,203	0,066	0,029	-0,014	-0,036	-0,096	0,050	-0,004
	Sig. (2-tailed)	0,153	0,118	0,001		0,035	0,500	0,769	0,889	0,711	0,321	0,610	0,968
	N	108	108	108	108	108	108	108	108	108	108	108	108
Conscientiousness	Pearson Correlation	-0,122	0,093	0,159	,203	1	0,000	0,166	0,082	0,084	0,018	-0,030	-0,177
	Sig. (2-tailed)	0,210	0,340	0,099	0,035		0,998	0,085	0,398	0,386	0,854	0,759	0,067
	N	108	108	108	108	108	108	108	108	108	108	108	108
Age	Pearson Correlation	-,258**	0,014	-0,104	0,066	0,000	1	0,059	,764**	,225**	-0,091	-0,003	,413**
	Sig. (2-tailed)	0,007	0,882	0,283	0,500	0,998		0,546	0,000	0,019	0,349	0,977	0,000
	N	108	108	108	108	108	108	108	108	108	108	108	108
Gender	Pearson Correlation	0,038	0,060	0,028	0,029	0,166	0,059	1	0,082	-0,086	0,068	-,381**	-0,149
	Sig. (2-tailed)	0,697	0,540	0,774	0,769	0,085	0,546		0,401	0,377	0,482	0,000	0,124
	N	108	108	108	108	108	108	108	108	108	108	108	108
Years of experience	Pearson Correlation	-,261**	-0,018	-0,141	-0,014	0,082	,764**	0,082	1	,263**	-0,189	0,001	,493**
	Sig. (2-tailed)	0,006	0,853	0,145	0,889	0,398	0,000	0,401		0,006	0,050	0,992	0,000
	N	108	108	108	108	108	108	108	108	108	108	108	108
Region	Pearson Correlation	-0,096	-,252**	0,097	-0,036	0,084	,225**	-0,086	,263**	1	-0,188	0,063	-0,037
	Sig. (2-tailed)	0,322	0,008	0,318	0,711	0,386	0,019	0,377	0,006		0,051	0,516	0,702
	N	108	108	108	108	108	108	108	108	108	108	108	108
Matrix orientation	Pearson Correlation	-0,049	0,067	-0,055	-0,096	0,018	-0,091	0,068	-0,189	-0,188	1	0,001	0,000
	Sig. (2-tailed)	0,613	0,488	0,573	0,321	0,854	0,349	0,482	0,050	0,051		0,993	1,000
	N	108	108	108	108	108	108	108	108	108	108	108	108
Education level	Pearson Correlation	0,027	-0,028	-0,002	0,050	-0,030	-0,003	-,381**	0,001	0,063	0,001	1	,274**
	Sig. (2-tailed)	0,783	0,771	0,986	0,610	0,759	0,977	0,000	0,992	0,516	0,993		0,004
	N	108	108	108	108	108	108	108	108	108	108	108	108
Job level	Pearson Correlation	-0,129	0,069	-0,087	-0,004	-0,177	,413**	-0,149	,493**	-0,037	0,000	,274**	1
	Sig. (2-tailed)	0,183	0,475	0,373	0,968	0,067	0,000	0,124	0,000	0,702	1,000	0,004	
	N	108	108	108	108	108	108	108	108	108	108	108	108

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Appendix E: list of 37 controllership activities (Verstegen et al., 2005)

1. Reporting information retrospectively (after the fact control)
2. Changing the control system of an organization (like its budget cycles)
3. Supporting the goals of top management of an organization
4. Maintaining accounting information systems (including financial systems)
5. Presenting reports for third parties (for example accountants/auditors)
6. Providing information on a 'need to know' basis
7. Protecting organizational assets through internal control
8. Exchanging information vertically
9. Reporting financial information
10. Giving advice proactively
11. Reporting information prospectively (before the fact control)
12. Maintaining the control system of an organization without making changes
13. Processing information from formal, financial systems
14. Preparing reports for third parties (for example accountants/auditors)
15. Supporting change processes
16. Interpreting analyses of factors influencing business results
17. Supporting the goals of the line management of an organization
18. Designing the control system of an organization
19. Exchanging information horizontally
20. Leading the administrative department of an organization
21. Providing information to those who may be interested
22. Preparing reports for responsibility accounting purposes and organizational control
23. Reporting non-financial information
24. Constructing accounting information systems (including financial systems)
25. Processing information from formal, non-financial systems (like operational systems)
26. Presenting reports for responsibility accounting purposes and organizational control
27. Leading change processes
28. Preparing analyses of factors influencing business results
29. Supporting the goals of external parties
30. Giving advice reactively
31. Exchanging information with third parties (for example with accountants/auditors)
32. Processing information from informal systems (like social systems)
33. Managing the risk connected with business conduct
34. Negotiating with auditors about proposed changes in the control system(s)
35. Leading strategy formulation processes
36. Performing audits in an organization
37. Supporting strategy formulation processes



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