



**Doctoral School of  
Business  
Administration**

## **SUMMARY OF THESIS**

**Ágnes Szukits**

**Management control system design and the organisational role of  
controllers**

**Supervisor:**

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University professor, Director of Institute

Budapest, 2016

**Institute of Management**  
**Department of Management and Organization**

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## 1 Research objectives and background

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Understanding the contemporary role of controllers has always been a research topic of interest, but during the last decade it has gained in popularity. Company crises indicate not only the failure of external control mechanisms, but also the shortcomings of internal control. Questionable accounting practices, poor internal reporting (and auditing partners which are under pressure) have caused the bankruptcies of mammoth corporations such as Enron and WorldCom. Some years after these accounting scandals the financial crisis of 2008 made it unequivocally clear that there is a need for changes in control mechanisms. Today, both academics and professional bodies increasingly report that this change has at least been partly achieved, and among these changes, controllers now own a wider range of tasks and have more responsibilities.

This change in the significance and the role of controllers may be derived from radical changes in the wider environment in which they operate (Dobák, 2009; Dankó & Barakonyi, 2012; Horváth, 2012). The main drivers are both external (changing business market conditions, new managerial philosophies) and internal (organisational re-design, IT system developments, implementation of management technique innovations, human resource developments) (Burns & Baldvinsdottir, 2005).

The contextual factors that are influencing controllers' roles are well-researched, and so are the contingencies influencing underlying management control systems (MCS). Less focus has been placed on the link between the two lines of research. This thesis investigates the relationship between management control systems and the organisational role of controllers, without explicitly discussing the wider environmental context and influencing factors. While recognizing the importance of the wider context, I focus more on the relationship between the tools that are applied, the information provided by MCS and the roles acted out by the controllers.

MC has a changing nature. Its social, organizational and economic context is constantly changing both in time and space (Chapman, Hopwood, & Shields, 2006). Therefore, what is subsumed under the mantle of MC has changed, not only with time, but it is very different among countries as well. In order to highlight this diversity, an overview and a synthesis of the current interpretations of contemporary management control and management accounting was provided in the thesis. In this understanding, **management control is about powerful influence of behaviour in organisations** (Anthony & Govindarajan, 2006; Merchant & Stede,

2012). There are many ways in which this behaviour can be influenced. Management control in a broad sense involves both formal and informal control mechanisms. These control types are not mutually exclusive but are applied in parallel in an organisation, at different intensities. Authors' conceptualization of MC often considers only formal management control (Anthony & Govindarajan, 2006), referred to as financial result control by Merchant and Van der Stede (2012) or as management control in a limited and tactical sense by Macintosh and Quattrone (2010). At the same time, it is *“only part, albeit usually a very important part, of the entire spectrum of control mechanism used to motivate, monitor, measure and sanction the actions of managers and employees in the organization”* (Macintosh & Quattrone, 2010, p. 2).

While recognizing the importance of informal control mechanisms, the current paper focuses on formal management control. In line with the functionalist approach of the dissertation, the systematic (formal) aspects of MC are investigated and MCS are characterized in two terms: by its tools and the information provided by the tools, referred to as the design of MCS.

Investigating the association between the design of formal MCSs and the role of controllers is interesting for several reasons. Although both the environmental changes and management gurus call for new roles for controllers, this cannot happen from one day to the next. It requires changes in other elements of MCS: the formal tools used in daily practice that can produce more and broader-based information, and IT systems that enable the effective production and distribution of information (Drótos, 2010).

At the same time, the availability of better information does not necessarily mean that it will be used. If it will be used in business activities (i.e. the MC has an impact), the relevant information can still be provided on the side-line, without any involvement by controllers in business, without any change in the organisational roles they play.

Organisational roles of controllers can be researched on several ways. Role concepts of MC researchers vary heavily based on their epistemological and ontological assumptions which are deeply rooted in the theory applied to explain the role. In my research I adopt a **functionalist role approach** and assume that the role of controllers originates from the position, not from the individual.

Studying the role of controllers, MCS and their link to other organisational features is usually based on the responses of controllers. While the self-image of the profession is very important, perception gaps and perception failures are well known (Pierce & O'Dea, 2003). Therefore, this thesis reports from the **executive point of view**. Roles are interpreted as the extent to which

controllers are involved in business, not based on self-reports but based on the perception of top executives. Involvement relates to both the daily decision making processes and strategy development and implementation processes. It raises the following research question and hypotheses:

*Q1: To what extent is the involvement of controllers in business based on the perceptions of top executives?*

***H1a: Although the involvement of controllers in decision making is noticeable, controllers are still mainly seen by top executives as mere number provider.***

***H1b: Although there is an active role for controllers in strategy development and implementation, based on the perceptions of top executives, this is only characteristic of a minority of controllers.***

The research is designed to contribute to better understanding of the link between formal systems and the functioning of controllers within their organisational context. In the research model (see Figure 1), the existence of multiple, simultaneous relationships is hypothesized between a selected set of factors of MCS design and the involvement of controllers.

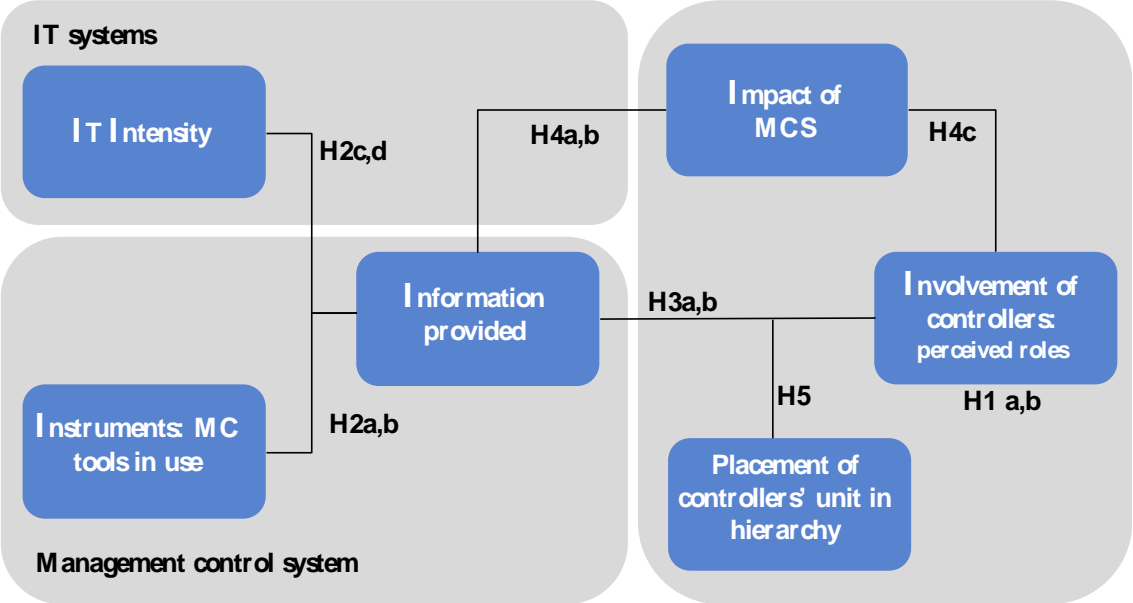


Figure 1: Research construct

It raises the following research questions and hypotheses:

*Q2: Is the intensive use of MC and IT tools linked to the ability of providing the relevant information?*

***H2a: Applying broad-scope MC tools supports the provision of a broad scope of information.***

***H2b: Applying broad-scope MC tools supports the function of frequent information provision.***

***H2c: IT intensity supports the provision of a broad-scope of information.***

***H2d: IT intensity supports the function of frequent information provision.***

***Q3: How is MCS design related to the involvement of controllers?***

***H3a: A broad-scope of MC information is positively associated with controllers' involvement.***

***H3b: The frequency of provision of MC information is positively associated with controllers' involvement.***

***Q4: How does the impact of MCS alter the relationship between MCS design and the role of controllers?***

***H4a: Provision of broad-scope information is positively associated with the impact of MCS.***

***H4b: Frequent information provision is positively associated with the impact of MCS.***

***H4c: The impact of MCS is positively associated with controllers' involvement.***

***Q5: How does the organisational placement of controllers' department alter the relationship between MCS design and the involvement of controllers?***

***H5: The positioning of controllers' department at lower hierarchical levels hinders the active involvement of them.***

## 2 Methodology

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Drawing on the idea of method triangulation, the research questions that emerged from the literature and my own previous work experience were analysed using both quantitative and qualitative techniques. First, data from a questionnaire survey was analysed using multivariate statistical methods widely employed for theory testing in MC research (Van der Stede, Young, & Chen, 2005).

The quantitative research is built on the analysis of a **cross-sectional survey** conducted in 2013 by the Competitiveness Research Centre of the Corvinus University of Budapest (Chikán, Czakó, & Wimmer, 2014). The self-administered questionnaire was addressed to Hungary-based enterprises registered in the database of the Hungarian Statistical Office.

A pre-test of the survey was performed in order to enhance content validity. The measurement instruments were first pre-tested through in-depth discussions with academics. In the second step of the pre-test phase, the questionnaires were filled out by test companies to ensure that the phrasing was easy to interpret by practitioners. After pretesting, the survey was administered between May and November 2013.

The thesis focuses on a limited set of variables using a reduced sample of 181 cases. The total sample of 300 organisations needed to be reduced due to the underlying research considerations, as follows:

- A) The research is designed to focus only on medium-size and large companies and exclude micro- and small-size organisations.
- B) Valid analysis could only be undertaken for companies for which there were few missing values from the dependent variables. Cases with a high level of missing values had to be deleted.
- C) The research is designed to reflect top executives' views about the role of controllers. Cases were eliminated when the respondents of the CEO survey were in charge of only one functional area, such as finance, IT or marketing.

As the the research is based on the perceptions of executives, selected questions from the CEO questionnaire (variables related to controllers' involvement and impact of MCS), the CFO questionnaire (variables related to MC information and tools) and one set of questions from the COO questionnaire (variables related to IT intensity) are used.

The research construct (see Figure 1) presents several interrelated boxes, each of which covers a broad concept like IT intensity, information provided, or the controllers' role. These



categories, covering different aspects of management control, cannot be measured directly using a single variable. Each concept is represented by several variables. Accordingly, first the variables were analysed, and, if needed, data transformation methods (e.g. centring and standardization) were used for different purposes, such as to:

- reduce the bias originating from the Likert-scale measurement method (centring)
- transform measurement scales from non-metric to metric (centring)
- meet the requirements of diverse statistical techniques (such as the standardization of variables for k-means clustering)

After data transformation indicators were developed, dimension reduction techniques were used to determine whether the variables could be condensed into one or more indicators. Without any a priori assumptions about the patterns of measured variables, **exploratory factor analysis** helped with understanding the structure of the variables and identifying groups of variables which form a latent dimension. In the cases where the factor analysis suggested extracting only one component, the variables were condensed into one latent variable (an indicator) such as 'IT intensity' or 'future orientation'. These latent variables correspond to the above-mentioned concepts in the research construct. In the cases when the factor analysis suggested the extraction of more factors, variables were condensed into more latent variables, such as those for the diverse roles of controllers (four indicators identified), or diverse elements of business support (six indicators).

Indicators were calculated as the weighted average of the variables. The weights are the factor loadings of the rotated component matrix: the correlation coefficients between the component and the original variable.

Further techniques such as non-metric multidimensional scaling, ANOVA and diverse cluster analyses methods were used to supplement the results of PCA and interpret the relationship between the variables.

Statistical analysis closed with a **path analysis**. The indicators (latent variables) developed earlier were put into a model using the **latent variable partial least square (LVPLS) method**. The association measures (e.g. correlation coefficients, eta-square measures) reported beforehand were only able to show a bivariate relationship: whether two indicators are related to each other or not. The major aim was to estimate all associations simultaneously and to define significant routes in the model.

In the next step, results of the statistical analysis were discussed with practitioners. Examination of qualitative evidence such as additional interviews does not change the validity of the survey per se, but can enhance the internal validity of the whole research project (Modell, 2005). Findings from quantitative analyses were presented and interpreted with the help of active controllers during **three focus group sessions**. Finally, **interviews with top executives** were conducted. Both the group and individual interviews were designed to facilitate a better and deeper understanding of the research findings: to validate the results of statistical analysis and to reveal other influencing factors not incorporated into the statistical model.

### 3 Summary of conclusions

#### 3.1 The nature of controllers' roles

This thesis investigated the nature of controllers' roles and their relationship with management control systems. It provided evidence that the role of controllers can be measured using at least two different dimensions (see Figure 2): level of involvement and level of analysis, which are two orthogonal (independent) components of controllers' roles. While the level of involvement refers to the classical typology of controllers as data providers or proposal makers (consultants), the level of analysis refers to the analytical component; either their strategic or operative function.

<b>Dimension 1: Level of involvement</b>	<b>Data Provider</b> <ul style="list-style-type: none"> <li>provides numerical data: collects and provides cost and income data (v103a)</li> <li>ensures provision of data as an input for strategy development (v104a)</li> </ul> <p style="text-align: center;">F7_1N_DataProv</p>	<b>Consultant</b> <ul style="list-style-type: none"> <li>makes proposals about enhancing corporate performance (v103c)</li> <li>takes part in the decision making as a consulting partner of managers (v103d)</li> <li>makes proposals about strategy reviews (v104e)</li> </ul> <p style="text-align: center;">F7_1P_CoInvolv</p>
	<b>Data Analyst</b> <ul style="list-style-type: none"> <li>analyses the data and provides explanations (v103b)</li> </ul> <p style="text-align: center;">F7_2N_DataAnal</p>	<b>Strategy Guard</b> <ul style="list-style-type: none"> <li>analyses the feasibility and the financing needs of the strategy (v104 b)</li> <li>appraises the fulfilment of strategic goals (v104c)</li> <li>warns in case of deviation from target values (v104d)</li> </ul> <p style="text-align: center;">F7_2P_StratAnal</p>

Figure 2: Controller role types as defined by PCA

The role of **Data provider** is associated with data collection and data provision activities. It is about supplying the numbers. Data provision is negatively associated with factor 1, representing a low level of involvement: controllers who are engaged in this activity collect and provide data 'from the sideline'; they are not deeply involved in business activities. Controllers as **Consultants** are perceived more as involved partners who actively make proposals about how to enhance performance and contribute to strategy reviews.

Interestingly, involvement in day-to-day operations and strategic processes are not perceived differently. Both data provision for strategy development and data provision in daily operations

are both strongly negatively correlated with Factor 1. At the same time, involvement in daily decision-making is perceived similarly to involvement in strategic processes.

With respect to Factor 2, the role of **Data Analyst** can be contrasted with the role of **Strategy Guard** which denotes the role of an individual who appraises the fulfilment of strategic goals and provides a warning in case of any deviation. While a data analyst deals with operative issues, a strategy guard focuses on the feedback related to strategic goals.

With respect to the first dimension, the data supported Hypothesis (H1a) that involved controllers are present in noticeable proportions in contemporary organisations, but the majority of executives still perceive them as being mere number providers. Controllers' involvement in strategic processes was found to have the same character: although an active role for controllers in strategy development and implementation is identifiable, this is only characteristic of a minority of controllers (H1b).

The disappearance of controllers' **traditional role as providers of data** has often been claimed, although this study indicates that the role is alive. This is still the most widely perceived role of controllers, and, more importantly, it is **richer than ever**. The broad adoption of IT solutions removes various data-related burdens from the work of controllers but does not imply that their role as providers of data has vanished. MCS embedded in IT systems generate new types of work for data-providing controllers. In order to create data reliability, controllers become process regulators. Data entries executed by business units come under their supervision.

	<b>Cluster 1</b>	<b>Cluster 2</b>	<b>Cluster 3</b>	<b>Cluster 4</b>
Reported values of role-related variables	High values for all variables	Low values for all variables	Moderate values for all variables, variables related to consultant role higher rated	High values for variables related to data provision
<b>Perceived role of controllers</b>	<b>STRONG CONTROLLER</b> Involved and simultaneously strong in all other areas	<b>NO CONTROLLER</b> Not involved, no perceived role	<b>INVOLVED CONTROLLER</b> Moderately involved, with weaknesses in data provision and analyses	<b>DATA PROVIDER</b> Not involved, but strong focus on data provision
Distribution of cases	34,8%	12,9%	34,8%	17,4%

Table 1: Cluster characteristics

Controllers who perform well with data provision may ‘move forward’ and engage more deeply in analytical processes and proposal making. The assumption of **role-maturity** is valid for many companies, but statistical analysis reveals a group of cases (see cluster 3 in table 1) where the proposal maker and consultant role of controllers appear to have no antecedent. While some explanatory factors have already been discussed, the conclusion is that behavioural and perceptual factors play a role. Consequently, more involved roles for controllers may replace traditional roles (in the perceptions of top executives), but more typically, involved roles complete more traditional roles.

While the data suggests that the role of data provider has become enriched, the **consulting role of controllers** (see Figure 2) **was found to be limited**: the real fields of consultancy offered by controllers are narrower than usually claimed; controllers are not expected to come up with their own answers to questions that arise about operational issues, but are mainly expected to represent the economic common-sense perspective from a position of relative neutrality.

### 3.2 Linking roles to MCS design

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Among all features, the intensity of use of diverse **MC instruments** was found to be a key predictor of how well a company’s MCS is developed (**H2a, H2b**). The **concept of expanding** was established to propose that only those companies which adopt advanced techniques are intensive users of traditional tools. At the same time, companies that intensively use traditional tools do not necessarily go further – simply because they do not need more advanced techniques, they feel that they are well-served by traditional ones.

IT intensity has a significant positive effect on reporting frequency (**H2c**), but it does not highly impact informational aspects of MCS per se (**H2d**). In this respect, the integrity of the implemented systems seems to be more important than their level of innovation.

The study focused on how roles are linked to the design of the MCSs applied in business corporations. My research findings provide evidence that “*formal, information-based routines and procedures*” – as Simons (1994, p.5.) defined MCS – are related to these roles of controllers. Statistical analysis revealed that this relationship (between roles and MCS) is of a different nature in the case of different roles: different roles are linked to diverse components of MCS, and diverse strengths of link to formal MCS are present with different roles. While the **role of data provider is more intensively linked with some aspects of formal management control systems, the role of consultant is only weakly affected by some other aspects of**

**formal MCS** (H3a, H3b) (see Figure 3). Provision of non-financial and external data may either directly or indirectly be linked to the consultant role (the strength of the relationships was significant, but weak). Evidence also suggests that this type of data is often not collected and maintained by controllers who may only use it for analytical purposes. The weak relationship between broad-scope information and roles can be partly rationalized by this fact.

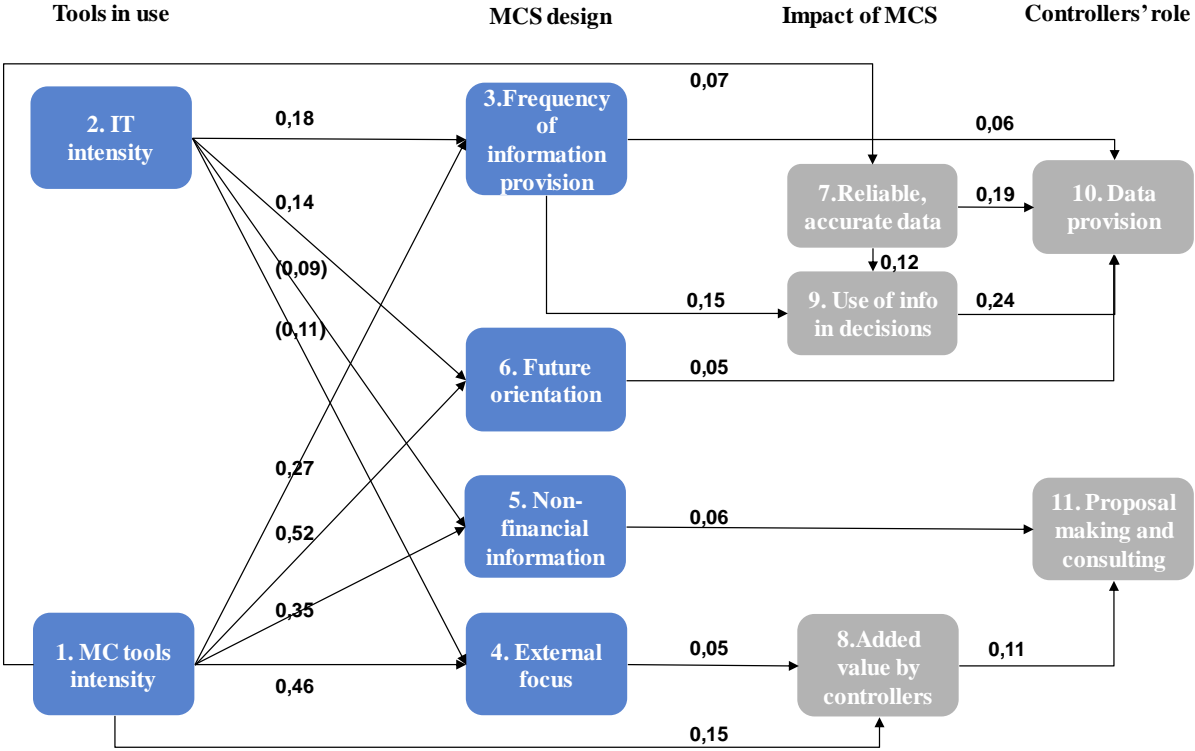


Figure 3: Path diagram with estimated path coefficients

The impact of MCS has been emphasized as a mediating factor that enhances the relationship between MCS design and roles. The research suggests that (a) top executives rated the personal contributions of controllers as the worst performing part of their reporting system, and (b) a ‘good reporting system’ is consisted of partly independent and partly contradictory elements. The ‘soul of the report’ and the ‘formal features of the report’ describe independent dimensions of the reporting system. The opposing variables of ‘formal features’ reveal that the user-friendliness of reports partly contrasts with content-related requirements. The ‘soul of the reports’ lies either in the data itself (i.e. the provision of reliable, accurate data) or in the controller themselves (personal added-value). While the opposing variables of the former dimension represent a trade-off, the later opposition between the variables can be rationalized by the diverse focus of the executives.

With respect to their relationship with roles, the dimension of ‘soul of the report’ seems to be more relevant. Reliability of data is the key antecedent for the role of data provider: higher reliability with data means that executives are more likely to use such information in decision making and corporate performance evaluation. Similarly, frequent reporting enhances the likelihood that the information will be used (**H4b**), which in turn strengthens the data providing role of controllers (see blocks 3, 7, 9 and 10 in figure 3).

The perceived added-value generated by the controller mediates between the provision of externally focused data and the controllers’ involved role (see blocks 4, 8 and 11 in figure 3). Having an external focus could not be directly linked with the role of controllers as consultants, but it was shown that incorporating externally focused information into their analysis enables controllers to add extra value (**H4a**). As a next step, this perceived added value supports their role as consultants (**H4c**). The perceived added-value of controllers might be influenced by other factors only partly incorporated into the model. The intensity of use of MC instruments is a supporting factor within the model: controllers who use more MC tools are perceived to be able to generate more added-value in reports.

The study incorporated a rarely emphasized organizational feature of controllers’ work: their placement within the overall hierarchy. While the relationship between the hierarchical level of the controllers’ unit and controllers’ perceived role is not significant, it was proved that this is an important moderating factor. The positioning of the controllers’ department at a lower hierarchic levels hinders their active involvement (H5) and also hinders their role in data provision. This moderating effect can be explained by the fact that roles were measured using the perceptions of CEOs. If controllers are located far from top management in the hierarchy, top executives may not see and appreciate their work, irrespective of their roles.

The research was designed to provide deeper understanding about the role of controllers; more concretely, about the involvement of controllers. Variables investigated within the statistical model presented in Figure 3 account for 57% of the variance of the role of controllers as consultants. The existence of the third variable problem related to ownership and company could be excluded.

Other factors not incorporated in the path analysis account for the remaining 43% of the variance. Concluding from the focus group sessions and interviews, outside-the-model factors (e.g. leadership styles, skills, and competences) are often of a ‘soft’ nature and also influence the behaviour of controllers and executives.

### 3.3 Research findings in light of the literature

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In the literature, researchers are preoccupied with investigating pre-existing systems (Choudhury, 1988). So are MC researchers, who focus on the presence of MCS, while less attention is directed to situations in which MCS and / or controllers are absent. However, organisational absences (like the lack of a formal MCS or controller/s) can also be informative.

**Cluster 2 companies** (see Table 1) represent ‘organisational absences’: their executives report that they are controller-less and they are very poorly equipped with MC and IT tools. The absence of management accounting systems was rationalized by Choudhury (1988) and later on by Taipaleenmäkii (2014) in several ways. The absence of management accounting and formal management control systems may be either ‘pathological’ (a result of managerial failure), or deliberate (a result of conscious decision-making). Both pathological and deliberate absences may be explained in several ways. The existence of Cluster 2 companies can be rationalized by a need-based pathological non-presence, by a possibility-based non-presence, or by an absence due to trust or constructive ambivalence. Need-based non-presence means that a CEO does not feel that employing a controller is necessary because of the smaller size and lower complexity of their company. Even if CEOs feel that having one is important, economic and functional factors (such as relative costs or a lack of knowledge in the organisation) may hinder the employment of a controller (possibility based non-presence). However, companies of these types often have some controlling-like activities performed by other employees, often called ‘finance staff’.

By deliberately not introducing formal systems, managers of Cluster 2 companies might be consciously focusing on creating flexibility while facing a turbulent environment (‘absence as constructive ambivalence’) or think that a formal MCS would be an attack on the trustworthiness of subordinates (‘absence as trust’). In these cases, human-related factors such as the personality of the CEO play a crucial rule, and a lack of formal management control is often replaced by other types of control. As Taipaleenmäkii (2014) stresses, the positive absence of a MC not only requires other, replacement control mechanisms, but also the existence of management accounting-based thinking in the absence of calculations.

As a counterpart to Cluster 2 companies, Cluster 1 companies (see Table 1) intensively apply both MC and IT tools and frequently report broad-scope information to their management. Their executives report high values for all role-related variables.



Previous research into the role of controllers has identified several role types. None of these typologies were adopted, but roles were identified as a result of factor analysis. The first factor representing the involvement of controllers was further analysed with the addition of two potential roles for data provider and consultant. Many attempts were made in the second (focus groups) and third phase (individual interviews) of the research to understand the two roles of data provision and consultancy. Findings about the widening of the data provider role are in line with the concept of ‘hybridization’. Granlund (2011) claimed that controllers become hybrids as they need additional expertise in IT. While this IT expertise is often ensured through employing IT professionals within the controllers’ unit, process regulation is necessarily undertaken by the controllers themselves and become an inherent part of the data provider role.

I argue that the role for controllers as consultants is typically focused only on some areas of business support. This finding is in line with prior research about this issue that showed that controllers can significantly contribute to raising the cost-awareness of managers (e.g. during new product development) and to resource allocation and monitoring issues (Wolf, Weißenberger, Wehner, & Kabst, 2015). The involved role of controllers creates a shift in intra-organizational power relations but does not directly relate to solving business-related problems. Controllers do not deliver compact solutions for underlying business-related problems. Their role rather concerns “*giving managers throughout the organization discretion and confidence to be acting in line with company goals*” (Windeck, Weber, & Strauss, 2013, p. 620).

This implies that controllers have limited responsibilities compared to those usually emphasized. Controllers can be partners in management decision making, but partnering refers only to the above mentioned fields. This limited level of involvement corresponds more to the role of ‘attention-directing’ than to ‘problem-solving’ (using the typology used by Simon et al. (1954)).

Cluster 1 company executives place strong emphasis on all roles. The controllers in this cluster are rationalized by Sathe (1983) as **strong controllers**, and as ‘hybrid’ controllers by Burns and Baldvinsdottir (2005): they are involved both in control-oriented and in business-support-oriented types of activities. It has often been argued that the independent role of a data provider and the involved role of a consultant are mutually exclusive (Granlund & Lukka, 1998; Maas & Matějka, 2009; Loo, Verstegen, & Swagerman, 2011). Cluster 1, representing 35% of the sample, indicates that these two types of roles can happily coexist in an organisation.

The question remains: Are data provision and consultant roles occupied by the same controller(s), or do Cluster 1 companies employ task and role separation at an individual level

(‘split controllers’, using Sathe’s terminology)? Roles can be separated on an individual level only if more controllers are employed; this is typically a feature of larger companies. Although many large-size companies (44%) can be found in Cluster 1, 80% of all companies in Cluster 1 are medium-sized, often employing only one controller. This fact provides evidence for the existence of strong controllers who not only support business domains with data, but who think together with business strategy makers. They “*retain their independence and even while actively contributing to business decisions*” (Sathe, 1983, p. 1).

A strong controller not only supports business areas with data, but he or she lives and thinks together with the business. This means that a role as consultant is played in addition to the traditional role of data provision. This concept of an increase in responsibility (instead of a changing field of responsibility) is also supported by a recent study by an American financial professional association (Desroches & Lawson, 2013).

My path model which was developed to explain the diverse roles of controllers has two independent variables: the intensity of use of MC and IT tools. MC and IT tools were applied as independent factors, directly affecting the frequency and nature of the information provided. In line with the previous research into the interplay between IT and MCS, the strength of association was found to be limited (Scapens & Jazayeri, 2003; Teittinen, Pellinen, & Järvenpää, 2013). The main rationale for this is that the research had a focus on medium-size companies which are still wrestling with effectively processing and providing internal financial information to managers.

With respect to MC tools, researchers willingly report that an increasing emphasis is being placed on the use of newer tools alongside traditional ones (Hyvönen, 2005). My research findings do not support this claim. The reported rates of use of MC tools are very similar both for traditional and advanced practices, more so than those reported earlier based on the previous survey (conducted in 2009) of the ‘Competing the World’ program (Wimmer & Csesznák, 2012). Even the use of the file-closer Balanced Scorecard has dropped in popularity (from 22.1% to 16.9%).

A similar decline in adoption rates at the end of the 1990s was rationalized by Dankó and Kiss (2006) as the learning effect of Hungarian companies. I believe that many medium-size companies simply do not need advanced techniques, as they are well served by traditional ones. A small production company, finding that the majority of its costs are related to the creation of the physical product, might be well served with a simple product cost calculation, without the

need to introduce ABC. This proposition is more evidence for the theory of the need-based absence of MCS, as theorized by Choudhury (1988).

Bodnár (1999), Dankó and Kiss (2006) claimed that company size significantly influences the MC toolkit of companies (defined as the number of MC tools in use, frequency of reporting, intensity of budgeting and planning). The current research results show that the significance of this size effect is eroding. Several intensity variables that measure diverse aspects of MCS still significantly differ among companies of different size, although the difference is small and cannot be experienced with all components of MCS.

The intensive use of advanced MC tools strongly affects all information-related features of MCS: companies well equipped with advanced tools are more likely to be better at providing broad-scope information. One might well ask, why does a perfect fit not exist? I believe that it is nearly impossible to incorporate all the potential sources of influence into such a study, even if they might have an effect on the dependent construct. Besides the external contingencies often investigated, I would like to stress one very important internal factor of influence: the managers themselves. Namely, what do they *want* to be reported and how often do they want it reported? If no need emerges to frequently report externally focused, non-financial information, controllers will not report it, even if they have a toolkit at hand.

Chenhall (2003), the author of numerous contingency studies into MCs, drew attention to the problematic of researching outcome-related variables related to the characteristics of MCS such as information provided, or tools in use. Organisational members, and even entire organisations such as subsidiaries, may be forced to use certain MC tools and to provide certain information, even though they find it of little use.

Besides measuring the frequency of tool use, actual utility (i.e. the benefits that are derived from the adoption of specific tools) could be the subject of further analysis. Information about their reported benefits may help with understanding how emphasis is placed on a certain MC tool / information. High adoption rates and the low ranking of benefits may indicate that a tool is becoming outdated, or was not able to meet the expectations of users (Joshi, 2001; CIMA, 2009).

However, research only into the adoption rates of tools and the information they provide is not without its use. As Gerdin (2005) has stated: *“It is logical to describe the MASs (Management Accounting Systems) in terms of what is actually supplied to managers. After all, only information that is available can help managers to achieve organizational goals.”*(Gerdin,

2005, p. 113). Instead of studying the perceived utility of information (as rated by CFOs in the survey), the model incorporated answers from CEOs at this point.

Low path coefficients leading from information-related variables (MCS design) to the consultants' role may exist for various reasons. First, the model omits several factors that might have an influence on role. Most important omitted influencing factors are the leadership style, the professional background and the personality of the executives. Second, there might be a discrepancy between the responses provided by the CFOs about MCS design and the responses provided by the CEOs about controllers' perceived roles. This existence of this discrepancy is supported by one of the latest reports of Institute of Management Accountants (IMA) and is explained by a lack of understanding and a lack of communication about the contribution of controllers to business (Desroches & Lawson, 2013).

The current research focused on finding evidence about whether and how MCSs influence the role of controllers. A crucial validity-related issue in my model is whether this **directional relationship** is dominant in one direction. Does the MCS system influence the controllers' role more heavily, or does the controllers' role have a greater effect on shaping the system? Undisputedly, both directions are reasonable and evidence has been provided in prior research for both. A recently published study shows that involved controllers "*are able to enhance the quality of the provided financial information*" (Wolf et al., 2015, p. 39). And, that alterations in MCS design can influence the role of controllers.

Interviews conducted after the statistical analysis confirmed that this effect of role on the MCS is more typical of the initial phase of MCS development. A stable MCS is more liable to influence its 'operator's' perceived role. Consequently, the effects have a cyclical nature, and, depending on the company's actual situation, either can be dominant. Unfortunately, path-models at this stage can describe only one-directional paths, so a single study can identify only one path of directionality, not more.

The outcome of the debate about directionality also depends on the researchers' approach; namely, whether they are functionalist or interpretivist. I applied a functionalist role model. Consequently, the study did not focus on how individuals (controllers) change their roles (organisational norms). This other direction is more the focus of emerging theory-led papers that provide evidence about how the redefinition of the role of controllers can later on lead to changes in the underlying MCS (Goretzki, Strauss, & Weber, 2013).

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