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Outsourcing of Management Accounting Functions in Small and Medium-Sized Enterprises (SMEs)

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RESUMEN

Esta investigación aborda la necesidad de estabilidad empresarial y emprendimiento exitoso a través de la colaboración con socios de servicios externos para pequeñas y medianas empresas (PYMEs). El estudio se centra en analizar las razones que justifican la contabilidad de gestión externa, que puede lograrse mediante la subcontratación de funciones de contabilidad de gestión por parte de las PYMEs. Se trata de un tema de gran relevancia, pues las pequeñas y medianas empresas (PYMEs) son la fuerza impulsora más importante de la economía alemana: representan la mayor parte del número de empresas, contribuyen a la economía con un elevado volumen de facturación, generan numerosos empleos y son la mayor fuente de puestos de formación.

Esto puede ilustrarse con las siguientes cifras de IFM Bonn (IFM, 2017): casi 3,5 millones de empresas pueden clasificarse como PYMEs, lo que equivale a aproximadamente el 99,5% de la facturación de todas las empresas. Además, generan casi el 35% de las ventas totales en Alemania. Sin embargo, a pesar de todas estas características, las PYMEs tienen deficiencias que se definen, entre otras cosas, por la falta de contabilidad de gestión. La contabilidad de gestión o no está disponible en absoluto en las PYMEs, o lo está solo de forma limitada. Como consecuencia, las PYMEs se pueden encontrar en dificultades financieras, e incluso llegar a la insolvencia. Este supuesto está respaldado por un estudio ya realizado en 2006 (Euler Hermes, 2006).

Además, las cifras de 2018 revelan que más del 70% de las empresas con una facturación anual inferior a 50 millones de euros se enfrentan a procedimientos concursales (Creditreform, 2018). Estos datos indican que las PYMEs se vieron afectadas por este tipo de procedimientos de quiebra, ya que pertenecen a esta categoría de tamaño. En consecuencia, es importante promover la comprensión de la necesidad de la contabilidad de gestión de las PYMEs. Además, independientemente de los datos mostrados, las PYMEs se enfrentarán a nuevos desafíos en el futuro: el aumento de las expectativas de los clientes y la transformación digital, que se ha vuelto indispensable y se considera un motor impulsor de los proyectos empresariales.

En este contexto, las PYMEs pueden utilizar la transformación digital como facilitador y realizar la contabilidad de gestión mediante la subcontratación de

estas funciones. En esta situación es útil analizar las razones que justifican la contabilidad de gestión externa por parte de las PYMES.

Esto lleva a la siguiente pregunta de investigación: ¿Qué razones dieron las PYMEs para subcontratar la contabilidad de gestión externa?

Además, las PYMEs suelen ser objeto de críticas debido a la falta de competencias y conocimientos en diversos campos. Por tanto, este trabajo investiga el *statu quo* de la contabilidad de gestión en las PYMEs con el fin de evaluar si tales críticas pueden sostenerse. Independientemente de tales hechos, las PYMEs deben aprovechar desafíos como la transformación digital para seguir siendo competitivas y cumplir con las crecientes expectativas que los clientes, entre otros, les imponen. Se ha realizado una encuesta utilizando un cuestionario online con el fin de evaluar las razones dadas por las PYMEs para subcontratar la contabilidad de gestión y de analizar el *status quo* de la misma. Se encuestaron un total de 220 PYMEs. Entre los participantes se encontraban directores generales y contadores administrativos. Con respecto al *status quo* de la contabilidad de gestión, los resultados del cuestionario *online* muestran que casi la mitad de las PYMEs encuestadas ya han implementado una contabilidad de gestión externa. La otra mitad de los encuestados consideran hacerlo a medio plazo.

Con respecto a los motivos para implementar de la contabilidad de gestión externa, la principal razón aducida por las PYMEs encuestadas fue la concentración en el negocio principal, seguida de la adquisición del mayor nivel de conocimientos técnicos que se puede lograr mediante el apoyo externo. El factor de coste también se dio como una razón, aunque con una calificación más baja que los otros motivos citados. Además, factores como la transparencia, la capacidad de respuesta y la velocidad de suministro de información se consideran factores clave a la hora de evaluar el desempeño del servicio de los consultores externos de contabilidad de gestión y, por lo tanto, decidir sobre la implementación de una contabilidad de gestión externa. Otras consideraciones, como el tamaño de la empresa, también contribuyen a la decisión a favor o en contra de la contabilidad de gestión externa. Sin embargo, los resultados muestran, como a menudo se asume y se discute en la comunidad científica, que las PYMEs tienen déficits que pueden estar relacionados, entre otras cosas, con las habilidades y los recursos basados en aplicaciones.

En general, los resultados del estudio muestran que las PYMEs encuestadas deberían tener más en cuenta las oportunidades ofrecidas por la transformación

digital, que puede ayudar a cerrar las brechas existentes en términos de competencias y aplicaciones utilizadas dentro de la contabilidad de gestión. Esto se puede lograr implementando una contabilidad de gestión externa, que garantiza una colaboración transparente y confiable con los socios de servicios externos, como los socios de subcontratación de procesos comerciales (BPO), ya que tienen las habilidades y aplicaciones necesarias, y están acostumbrados a trabajar en estrecha colaboración y confianza con la dirección empresarial. Además, las PYMEs deben valorar abiertamente y con sus empleados los cambios que pueden contribuir a la implementación de una contabilidad de gestión externa. Si las PYMEs tienen en cuenta todas estas recomendaciones, pueden llegar a alcanzar una contabilidad de gestión de vanguardia y así cumplir con las expectativas puestas en ellas.

La disertación concluye con la recomendación de realizar más investigaciones basadas en los resultados del estudio. La capacidad de respuesta y el nivel de conocimiento personal del gerente o propietario de la empresa aparecen como un motivo arraigado de la decisión de subcontratar las funciones de contabilidad de gestión, y puede ser analizado a través de una investigación cualitativa en la que se realicen entrevistas a expertos.

Palabras clave: Pequeñas y medianas empresas, subcontratación de funciones de contabilidad de gestión, colaboración con consultores de contabilidad de gestión fuera del sitio, transformación digital, subcontratistas de procesos comerciales (BPO)

SUMMARY

This study deals with the need for business stability and successful entrepreneurship through collaboration with off-site service partners for small and medium-sized enterprises (SMEs). The focus is on analyzing the reasons that justify off-site management accounting, which can be achieved by outsourcing management accounting functions by SMEs. This topic is highly relevant as small and medium-sized enterprises (SMEs) are the most important driving force for the German economy. They account for the largest share of the number of enterprises, contribute to high turnover, offer many jobs, and are the largest source of apprenticeship places.

This can be illustrated by the following figures from IFM Bonn (IFM 2017): Almost 3.5 million enterprises can be classified as SMEs, which is equivalent to about 99.5 percent of all enterprises contributing to turnover. Moreover, they generate almost 35 percent of total sales in Germany. However, despite all their strong characteristics, SMEs have shortcomings which are defined, among other things, by the lack of management accounting. Management accounting is either not available at all or only to a limited extent at SMEs. However, this has the consequence that SMEs get into financial difficulties, which are accompanied by insolvency. This assumption is supported by a study already carried out in 2006 (Euler Hermes 2006).

Moreover, the figures for 2018 reveal that more than 70 percent of the enterprises with an annual turnover of less than 50 million euros are facing bankruptcy proceedings (Creditreform 2018). Such figures indicate that SMEs were affected by such bankruptcy proceedings as they belong to this size category. Consequently, it is important to promote an understanding of the need for management accounting in SME management. Moreover, irrespective of the data shown, SMEs will face further challenges in the future. These are increasing customer expectations and challenges such as the digital transformation, which has become indispensable and is considered a driving force that advances business projects.

In this context, SMEs can use the digital transformation as an enabler and realize off-site management accounting by outsourcing management accounting functions. In this context, it is useful to analyze the reasons that justify off-site management accounting by SMEs.

This leads to the following research question: What reasons were given by SMEs for off-site management accounting?

Moreover, SMEs are often subject to criticism due to a lack of competencies and know-how in various fields. This dissertation project will thus investigate the status quo of management accounting within SMEs. This should contribute to assess whether such criticism can be sustained. Irrespective of such facts, SMEs should take advantage of challenges such as digital transformation to remain competitive and to meet the growing expectations that customers, among others, place on them. A quantitative survey was conducted using an online questionnaire to evaluate the reasons given by the SMEs surveyed for off-site management accounting and to assess the status quo of management accounting in SMEs. A total of 220 SMEs were surveyed. Among the participants were managing directors and management accountants. With regard to the status quo of management accounting, the results of the online questionnaire show that almost half of the SMEs surveyed have already implemented an off-site management accounting. The other half of those surveyed can imagine implementing off-site management accounting in the medium-term.

With regard to the reasons for off-site management accounting, the main reason given by the SMEs surveyed was the concentration on the core business, followed by the acquisition of a higher level of know-how that can be achieved by off-site support. The cost factor was also given as a reason, however with a lower rating than the reasons given above. In addition, factors such as transparency, responsiveness and speed of information provision are considered as key factors when it comes to evaluating the service performance of off-site management accounting consultants and thus deciding on off-site management accounting. Moreover, other considerations such as the size of the enterprise also contribute to the decision for or against off-site management accounting. However, the results show, as is often assumed, and discussed in the scientific community, that SMEs have deficits that may be related, among other things, to skills and application-based resources.

Overall, the results of the study show that the SMEs surveyed should make much greater reference to the opportunities offered by digital transformation, which can help to close existing gaps in terms of competencies and the applications used within management accounting. This can be achieved by implementing an off-site management accounting, which ensures transparent and trustworthy collaboration with off-site service partners such as business process outsourcing partners (BPOs) as they have all these necessary skills and applications. They are also used to working closely and trustfully with enterprise management. Furthermore, SMEs should openly discuss with their employees about changes that can contribute to the implementation of an off-site management accounting. If the SMEs take all these recommendations into account, this can enable them to achieve state-of-the-art management accounting and thus meet expectations placed in them.

The dissertation concludes with the recommendation for further research based on the study results. It is about the topic of responsiveness and manager's or owner's personal cognition which appears as a deep-rooted reason for the manager's or owner's decision to outsource management accounting functions and which can be analyzed with the help of qualitative research in which expert interviews are carried out.

Keywords: Small and medium-sized enterprises, outsourcing management accounting functions, collaboration with off-site management accounting consultants, digital transformation, business process outsourcers (BPOs)

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LIST OF ABBREVIATIONS

%	Per cent
(α)	Significance level
€	Euro
3D	Drei Dimensional = Three-dimensional
BDU	Bundesverband Deutscher Unternehmensberater = German Federal Association of Management Consultants
BI	Business Intelligence
BMWi	Bundesministerium für Wirtschaft und Energie = Federal Ministry for Economic Affairs and Energy
BPO	Business Process Outsourcing
DV	Dependent variable
EC	European Commission
ERP	Enterprise Resource Planning
et al.	et alii (Latin) = and others
et seq	et sequens = and the following
H0	Null Hypothesis
H1	Alternative Hypothesis
IFM	Institut für Mittelstandsforschung Bonn = Institute for SME Research Bonn
IT	Informationstechnologie = Information Technology
IV	Independent variable
KPIs	Key Performance Indicators
MIS	Management Information Systems
p-value	probability error value
ROI	Return on Investment
SMEs	Small and medium-sized enterprises

UK.....	United Kingdom
US	United States
USA	United States of America
x.....	variable
y	variable
ZEW.....	Zentrum für europäische Wirtschaftsforschung = Center for European Economic Research

1 INTRODUCTION

1.1 PROBLEM SPECIFICATION

Nowadays, business support (Accenture 2018) is more relevant than ever. This is due to growing customer expectations (Becker et al. 2014: 439) and challenges such as digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.). However, many enterprises, particularly small and medium-sized enterprises (SMEs) (Schneider 2004: 7; Becker 2008: 4 et seq.), have failed to meet such expectations for various reasons (Gleich et al. 2016: 73 et seq.; Kaltenbacher 2011: 78; Piezonka 2013: 13). In this respect, SMEs have not been prepared for requirements caused by digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) owing to deficiencies in competencies and applications (Gleich et al. 2016: 73 et seq.; Kaltenbacher 2011: 78; Piezonka 2013: 13). Another reason is that SMEs have concentrated more on their core business and less on the interpretation of business data (Knop 2009: 14; Lohr 2012: 35 et seg.; Becker et al. 2014: 66). This, however, resulted in various weaknesses, which include, among others, the deficiency or lack (Klett et al. 2010: 6; Euler Hermes 2006) of management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) within SMEs (Schneider 2004: 7; Becker 2008: 4 et seq.). Other factors, such as costs (Lohr 2012: 35), also played a role when it came to implementing management accounting in SMEs (Klett et al. 2010: 6). As a result, such factors have led to the instability of SMEs involving bankruptcy applications (Staab 2015: 6 et seq.).

Considering this, enterprises must be supported by experienced professionals (Accenture 2018) who can accompany them in their business projects. Off-site consultants or off-site management accounting consultants (Accenture 2018) can offer support and provide advice, as they show experience in business consulting and in the creation of business projects. Thus, the presented work, which aims to recommend off-site management accounting (Horak 1995: 128; Pössl 1991: 60) for SMEs with help of outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen

2010: 68 et seq.) and to support digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) for SMEs, analyses the reasons for (Lohr 2012: 35) off-site management accounting (Horak 1995: 128; Pössl 1991: 60) and the status quo of management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) within SMEs.

This topic was highly significant as SMEs are known as Germany's economic engine. More than 3.5 million enterprises can be categorized as SMEs (IFM 2017), which generated sales of 2.3 trillion euros (IFM 2017) of all German enterprises (IFM 2017). Such a figure clearly indicates the economic strength of SMEs. This economic strength, however, is weakened by the analysis below.

Analyses by the German Credit Insurance Hermes (Euler Hermes 2006) showed that about two-thirds of the enterprises suffer economic difficulties (Euler Hermes 2006). They referred to enterprises with a turnover lower than 50 million euros (Euler Hermes 2006) and stated a lack of management accounting (Klett et al. 2010: 6; Euler Hermes 2006) as one of the main reasons for filing for bankruptcy (Euler Hermes 2006). This situation can also be applied to SMEs based on the listed criterion (Staab 2015: 6 et seq.).

As consequence, this problem must be solved with the aid of creating an off-site management accounting (Horak 1995: 128; Pössl 1991: 60) or developing on-site management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149). Otherwise, SMEs could be forced to cut jobs, which in turn could jeopardize the German economy, due to that SMEs also generate the highest proportion of employment subject to social security contributions, at almost 58 percent (IFM 2017).

There are still some gaps in science as hardly any solutions were offered as far as the issue of the deficiency (Klett et al. 2010: 6; Euler Hermes 2006) of management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) was concerned. As an example, scientists such as Kummert (2004: 162) can be cited here, who analyzed the competencies of management accountants and concluded that on-site management accountants lack certain competencies that can contribute to better business results (Kummert 2004: 162). According to his analyses, however, no proposed solutions can be found. Much more recent studies (Siller et al. 2016: 12) showed that SMEs do not realize the advantages of management accounting

(Siller et al. 2016: 12). Thus, SMEs operate with data that limit entrepreneurial activities (Siller et al. 2016: 12). Such behavior, however, involved risks (Siller et al. 2016: 12). The approach of Siller et al. (2016: 12) does not follow any recommendations, either.

Thus, there is a necessity to close the gap in science by advancing an off-site management accounting (Horak 1995: 128; Pössl 1991: 60) for SMEs. In doing this, the division of power and responsibilities between off-site management accounting consultants (Accenture 2018) and SME management, which can carry certain risks, is also discussed, and explained in more detail.

In addition, the topic of digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) is considered as an enabler (Kessler et al. 2019: 87 et seq.) for creating an off-site management accounting (Horak 1995: 128; Pössl 1991: 60) in SMEs. In this conjunction, SMEs can take advantage of digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) as it offers the possibility to increase data quality and speed (Kieninger et al. 2015: 5 et seq.). Thus, data can be analyzed flawlessly, which can lead to a better outcome (Lingnau et al. 2017: 84). This would lead to fewer SMEs facing difficulties.

This dissertation project aims to minimize the gaps in science and to answer the following central question:

What reasons were given by SMEs for off-site management accounting?

Thus, the reasons given by SMEs for implementing off-site management accounting (Horak 1995: 128; Pössl 1991: 60) are researched. Moreover, another important aspect, which is the status quo of management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.), was surveyed to find out whether the SMEs interviewed have already implemented off-site management accounting (Horak 1995: 128; Pössl 1991: 60) and, in this respect, what deficits (Gleich et al. 2016: 73 et seq.; Kaltenbacher 2011: 78; Piezonka 2013: 13) actually exist within their management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.).

1.2 CONTRIBUTION TO THE CURRENT STATE OF RESEARCH

The study contributes to the area of business research in several areas:

First, the study shows how important the creation of off-site management accounting (Horak 1995: 128; Pössl 1991: 60) is for SMEs. It thus supports management in decision-making (Urigshardt et al. 2008: 1 et seq.). In this respect, it is of enormous value and interest to analyze the acceptance of off-site consulting services (Accenture 2018) by SME management. Moreover, it is analyzed which criteria are evaluated by SME management for the mandating of off-site management accounting consultants (Accenture 2018), as this can influence the collaboration between off-site management accounting consultants (Accenture 2018) and the SME management and thus can influence the success of the company. In order to analyze the level of collaboration with off-site management accounting consultants (Accenture 2018), references will be taken to theoretical concepts and models within science. Such theoretical concepts and models can help analyze the reasons why the management of SMEs are willing to collaborate with off-site management accounting consultants (Accenture 2018). The following concepts and models have been chosen as they provide the basis for the investigation of such reasons. It is about the principal agency theory (Ackere 1993: 83 et seq.), resource-based theory (Kühnl 2010: 62; Bucerius 2004: 18), transaction cost theory (Liebhart 2001: 79), and power theory (Schuhmacher 2005: 161; Schneider 2006: 154).

Second, since it is aimed to recommend off-site management accounting (Horak 1995: 128; Pössl 1991: 60) to SMEs, it makes sense to analyze which factors contributed to a successful collaboration with off-site consultants (Accenture 2018) who are familiar with management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.).

Thus, success factors are filtered out with the aid of this empirical study. In return, critical success factors are also analyzed, which can counteract a successful collaboration with off-site management accounting consultants (Accenture 2018). Finally, the aim is to minimize the critical factors and increase the success factors.

Third, it will be analyzed whether enablers (Kessler et al. 2019: 87 et seq.) such as digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) can

contribute to the creation of off-site management accounting (Horak 1995: 128; Pössl 1991: 60) for SMEs.

Furthermore, the contribution to the current state of research will be based on hypotheses derived from the state of research (Doering et. 2016: 35). Different topic sections are created to make a comparison with the theory. Thus, the sections consist of the topics of small and medium-sized enterprises (SMEs) (Schneider 2004: 7; Becker 2008: 4 et seq.), management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.), digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.), outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11), and theories of entrepreneurship (Dibbern et al. 1999: 5 et seq.).

1.3 METHODOLOGY

The deductive approach (Doering et. 2016: 35) will be chosen as the research approach for the present dissertation project. Thus, the research question and hypotheses will be derived from the current state of research (Doering et. 2016: 35). Moreover, regarding the research project (Stein 2014: 135 et seq.), a cross-sectional design will be chosen (Stein 2014: 135 et seq.). A cross-sectional design (Stein 2014: 135 et seq.) includes a unique research (Stein 2014: 135 et seq.). In addition, a standardized questionnaire will be used to conduct quantitative research (Schnell et al. 2013: 315). In this respect, an online survey (Schnell et al. 2013: 315), including the standardized questionnaire (Schnell et al. 2013: 315), will be used as a survey method (Schnell et al. 2013: 315). Afterward, the online survey will be carried out using software specified for online surveys. The study results will be presented using the statistical program SPSS (Brosius 2013: 438). The course of the dissertation is shown below.

After showing the advantages of off-site management accounting (Horak 1995: 128; Pössl 1991: 60) in SMEs in the economic context, Chapter 2 defines the term small and medium-sized enterprises (SMEs) (Schneider 2004: 7; Becker 2008: 4 et seq.) and analyzes the economic importance of SMEs using the quantitative and qualitative criteria (Kolb 2006: 7; Schauf 2009: 5; Kästner 2012: 11; Henschel 2010: 2; Ihlau et al. 2013: 4; Abharamczik 2012: 14; Seehausen 2014: 120; Zaitsava 2011: 3; Osthoff 2013: 20; Schlüter 2007: 14) of German SMEs. As the media and the

scientific community have shown, SMEs have various shortcomings. In addition to a lack of on-site management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149), they suffer from a shortage of skilled staff (Bußmann 2015: 47) and also showed weaknesses in corporate management (Schauf 2009: 15; Menzel et al. 2011: 93 et seq.; Behrends et al. 2005: 17; Immerschitt et al. 2014: 29). Both topics are also dealt within the second chapter as they are closely related to the topic of management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.).

However, before such weaknesses are outlined, the strengths of SMEs are first shown so that an overall impression is guaranteed, and the SMEs are not just viewed from one perspective. Within Chapter 3, the definition of the term management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) and the historical course of management accounting will be shown. After all, this is a business field that has a long history and has had to struggle with some economic turbulences. Management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) has quantitative and qualitative features (Müller 2014: 89; Vedder et al. 2011: 79) as well as expert and general duties (Gleich et al. 2017: 160; Hahn 2013: 186; Reichmann et al. 2017: 7) that should also be highlighted in this respect.

Often weaknesses contributed to the consideration of ideas and suggestions for improvement. Regarding the lack of management accounting (Klett et al. 2010: 6; Euler Hermes 2006), the question arises as to which form of organization of management accounting is most suitable for one's own enterprise. Thus, Chapter 3 also presents the organization's forms of on-site management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149) and off-site management accounting (Horak 1995: 128; Pössl 1991: 60) as possible options. As it is aimed to recommend an off-site management accounting (Horak 1995: 128; Pössl 1991: 60), Chapter 3 also shows the scope of off-site management accounting (Horak 1995: 128; Pössl 1991: 60), the reasons for off-site management accounting (Horak 1995: 128; Pössl 1991: 60) and the choice of individual businesses that act as project-related off-site management accounting consultants (NordConsulting 2021; SBU Götz Concept 2021; Karin Menne - Interim Management 2021; Zahlenklar accounting & Consulting 2020; Modul-Consult 2021). In this respect, the

advantages and disadvantages of off-site management accounting (Horak 1995: 128; Pössl 1991: 60) will also be shown.

Changes and improvements often necessitate enablers (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) as would be the case with off-site management accounting (Horak 1995: 128; Pössl 1991: 60). There is the opportunity to use digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.), which is a current and much-discussed topic. Digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) can help through changes as it is considered as an enabler that contributes to improvements and changes. In this respect, the topic of digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.), digital maturity models (Schwalbach 2018: 122 et seq.; Bühler et al. 2018: 197), and their function as enablers is discussed in Chapter 4. The topic of digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) will be concluded with the aid of some studies on the degree of digitalization in SMEs. Furthermore, the degree of digitalization within management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) will be highlighted as well.

As the topic of this presented work is the outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) of management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) in SMEs, outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) is viewed in Chapter 5 from the perspective of improved focus and efficiency.

As stated before, it can be assumed that digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.), plays an important role in management accounting and outsourcing projects (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11). Thus, it is analyzed in Chapter 6, which also involves topics such as the change in the role of management accountants. The topic of digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) with management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.), as well as the topic of outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11), are also given special attention. Moreover, the topic of outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) is viewed from the perspective of Business Process Outsourcing (BPO) (Accenture 2018).

Furthermore, the services of Business Process Outsourcing Providers (BPOs) (Accenture 2018) are shown as an alternative to the option of individual businesses (NordConsulting 2021; SBU Götz Concept 2021; Karin Menne - Interim Management 2021; Zahlenklar accounting & Consulting 2020; Modul-Consult 2021) and an analysis of management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) for outsourcing projects (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) at SMEs is executed.

Since the topic of the dissertation is closely associated with entrepreneurial behavior and decision-making, theoretical concepts are analyzed in Chapter 7. In this respect, four concepts are presented to analyze managerial behavior. It is about the principal agency theory (Ackere 1993: 83 et seq.), resource-based theory (Kühnl 2010: 62; Bucerius 2004: 18), transaction cost theory (Liebhart 2001: 79), and power theory (Schuhmacher 2005: 161; Schneider 2006: 154).

The seventh chapter is followed by the eighth chapter on the research design (Stein 2014: 135 et seq.). With help of this chapter, the concept of the research (Stein 2014: 135 et seq.) is designed. Moreover, it contains statistical values and intended steps such as planning, execution, and evaluation of the quantitative research (Stein 2014: 135 et seq.). Furthermore, additional procedures are outlined regarding the selection of data sources such as primary data sources, taking into account the population, determining the sample size, and designing the online survey questionnaire (Doering et al. 2016: 412 et seq.). Subsequently, the hypotheses and variables (Doering et al. 2016: 407 et seq.) are presented, followed by the study.

After the empirical study (Doering et al. 2016: 412 et seq.) had been carried out using a questionnaire sent via the Internet (Doering et al. 2016: 412 et seq.), the findings are evaluated with the aid of the statistical program SPSS (Brosius 2013: 438) using descriptive and inference statistics (Eckstein 2006: 188; Brosius 2013: 438), which are shown in Chapter 9.

In the next Chapter 10, a conclusion is drawn which contains managerial implications and recommendations for action for SMEs as well as an outlook.

The structure of the dissertation project is outlined in the following table:

Table 1: Structure of the dissertation.

1	**Introduction**
2	**Small and medium-sized enterprises (SMEs) in Germany** 2.1 Definition of the term small and medium-sized enterprises (SMEs) 2.2 Strengths and weaknesses of SMEs
3	**Management accounting and its challenges and chances** 3.1 Definition of the term management accounting 3.2 On-site and off-site management accounting
4	**Digital transformation as a process of advancing digital maturity** 4.1 Definition of the term digital transformation 4.2 Digital maturity models 4.3 Studies on digitalization in small and medium-sized enterprises (SMEs) 4.4 Studies on SMEs regarding their digitalization status in management accounting
5	**Outsourcing as a method to improve focus and efficiency** 5.1 Definition of the term outsourcing 5.2 Business Process Outsourcing approach

6	**Impact of digital transformation on management accounting and outsourcing** 6.1 Digital transformation and management accounting 6.2 Digital transformation and off-site management accounting 6.3 Digital transformation and outsourcing 6.4 Services of Business Process Outsourcers (BPOs) 6.5 Management accounting functions for outsourcing at SMEs
7	**Theoretical foundation** 7.1 Theory of entrepreneurship as a frame of reference 7.2 Hypotheses
8	**Research design** 8.1 Research guiding conclusions 8.2 Quantitative research
9	**Results of the empirical study** 9.1 Results of the descriptive statistics 9.2 Results of the inference statistics
10	**Conclusion** 10.1 Managerial implications and recommendations for action 10.2 Outlook

Source: Own depiction

2 SMALL AND MEDIUM-SIZED ENTERPRISES (SMES) IN GERMANY

Small and medium-sized enterprises (SMEs) (Schneider 2004: 7; Becker 2008: 4 et seq.) have shaped Germany's economy significantly (Becker 2008: 4 et seq.). However, many more demands will be placed on SMEs, which is due to challenges such as digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) and the expectations of stakeholders (Knop 2009: 3). This requires the support of experienced employees or off-site consultants (Accenture 2018) who can accompany SMEs in their business.

With help of this chapter, it is first intended to explain the terminology of small and medium-sized enterprises (SMEs) (Schneider 2004: 7; Becker 2008: 4 et seq.). Second, the economic value of small and medium-sized enterprises (SMEs) (Schneider 2004: 7; Becker 2008: 4 et seq.) regarding the creation of a management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) or off-site management accounting (Horak 1995: 128; Pössl 1991: 60) is shown. Subsequently, quantitative and qualitative characteristics of SMEs (Kolb 2006: 7; Schauf 2009: 5; Kästner 2012: 11; Henschel 2010: 2; Ihlau et al. 2013: 4; Abharamczik 2012: 14; Seehausen 2014: 120; Zaitsava 2011: 3; Osthoff 2013: 20; Schlüter 2007: 14) regarding the creation of management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) or off-site management accounting (Horak 1995: 128; Pössl 1991: 60) are revealed. Afterward, the strengths and weaknesses of SMEs are shown, which should contribute to come to a decision regarding a management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) or off-site management accounting (Horak 1995: 128; Pössl 1991: 60). One of the biggest weaknesses is the shortage of skilled staff in SMEs (Köper et al. 2000: 307 et seq.). Thus, it is analyzed separately. Separate consideration is also carried out regarding management implications caused by corporate management (Schauf 2009: 15; Menzel et al. 2011: 93 et seq.; Behrends et al. 2005: 17; Immerschitt et al. 2014: 29) in SMEs in view of an on-site management accounting (Mistlberger

2004: 297 et seq.; Kenning 2003: 149) and off-site management accounting (Horak 1995: 128; Pössl 1991: 60). At this point, it is recommended to assess the requirements for outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) based on the following chapters.

First, the definition of the term small and medium-sized enterprise (SME) will be shown with the aid of the following chapter.

2.1 DEFINITION OF THE TERM SMALL AND MEDIUM-SIZED ENTERPRISES (SMES)

Small and medium-sized enterprises (SMEs) can be characterized by help of their headcount (Schneider 2004: 7; Becker 2008: 4 et seq.) and the yearly sales earnings (Schneider 2004: 7; Becker 2008: 4 et seq.). It is about defining small and medium-sized enterprises (SMEs) with help of quantitative data (Schneider 2004: 7; Becker 2008: 4 et seq.). Thus, the IFM (2017) qualifies enterprises showing staff beyond 500 employees and yearly sales earnings beyond 50 million euros as a small and medium-sized enterprise (SME) (IFM 2017), while the European Commission (EC) (Broich 2015: 17; Schröder 2017: 13; Eymannsberger 2017: 93; Kruse 2012: 17; Diederichs 2014: 41) qualifies enterprises showing staff beyond 250 and yearly sales earnings beyond 50 million euros as a small and medium-sized enterprise (SME) (Broich 2015: 17; Schröder 2017: 13; Eymannsberger 2017: 93; Kruse 2012: 17; Diederichs 2014: 41).

Moreover, small- and medium-sized enterprises (SMEs) consist of diverse and heterogeneous enterprises, starting with small craft businesses up to larger manufacturing enterprises (Alikhan et al. 2006: 101). In this respect, there are many more characteristics that can be cited to describe small and medium-sized enterprises (SMEs) (Schneider 2004: 7; Becker 2008: 4 et seq.). Thus, reference is made to this possibility with help of Chapter 2.1.2. In this conjunction, there are different explanations for small and medium-sized enterprises (SMEs) (Schauf 2009: 3 et seq.). Thus, there are scientists such as Schauf (2009: 3 et seq.) who use the term *Mittelstand* (Schauf 2009: 13) to describe small and medium-sized enterprises (SMEs) (Schauf 2009: 3 et seq.).

In this respect, it is little-known that the term *Mittelstand* (Schauf 2009: 13) can be assigned to an age in which people of certain social backgrounds (Schauf 2009: 13) can be regarded as being part of a lower social group (Schauf 2009: 13). In the course of the delamination of the craft through factory work, a new entrepreneur class called *Mittelstand* (Schauf 2009: 13) emerged, which helped to distinguish working people from those who were engaged in brainwork (Schauf 2009: 4).

The following can be concluded: The explanations of the previous chapter showed that there is no uniform definition (Schauf 2009: 3; Becker 2008: 4 et seq.; Schneider 2004: 7) of the term small and medium-sized enterprises (SMEs) (Schauf 2009: 3; Becker 2008: 4 et seq.; Schneider 2004: 7). The result is that the term SME (Schneider 2004: 7; Becker 2008: 4 et seq.) and *Mittelstand* (Schauf 2009: 3) are oftentimes used equally (Schauf 2009: 3; Becker 2008: 4 et seq.; Schneider 2004: 7). Within the scope of the own study, the definition of Schneider and Becker (2004: 7; 2008: 4 et seq.) regarding small and medium-sized enterprises (SMEs) will be used as it is based on quantitative data. The reason for this is that SMEs will be narrowed down in advance for the own study, and this can be realized with help of quantitative data.

Moreover, for the sake of simplicity, the abbreviation SMEs was used instead of small and medium-sized enterprises. In the following, the economic importance of SMEs will be shown in detail. It aims to realize the significance of SMEs for the German economic system.

2.1.1 Economic importance of SMEs

Statistical data indicated that SMEs are the backbone of Germany's economy and influence Germany's competitiveness (IFM 2017). Data from IFM Bonn, an Institute for the German *Mittelstand*, showed that 3.47 million companies can be assigned to German SMEs (IFM 2017). Moreover, the turnover of SMEs was around 2.33 trillion euros, which was 35% (IFM 2017) of the total turnover of all enterprises, and their export sales amounted to 213.9 billion euros (IFM 2017).

Moreover, their share in the net value added was almost 57.8% (IFM 2017). SMEs can, however, be described with help of more characteristics: These included classification of 99.5 percent of all German enterprises as SMEs; employment of 17.49 million employees and employment of 81.9 percent of apprentices (IFM 2017).

For the sake of simplicity, the characteristics of SMEs are briefly presented in the following table.

Table 2: Characteristics of SMEs.

Characteristic	SMEs
Number of enterprises	3.47 million
Turnover	€ 2.33 trillion
Export sales	€ 213.9 billion
Net value-added	57.8%
Classification as SME	99.5 %
Employment	€ 17.49 Million
Apprenticeships	81.9%

Source: Own depiction according to IFM Bonn (2017)

These figures show that SMEs dominate the German economic sphere. The success of SMEs is due to economic reasons, which meant that SMEs, in particular, can be characterized by their closeness to customers and high flexibility (Staiger 2008: 17). This enabled them to respond quickly and satisfy their customers. Moreover, SMEs dealt differently with job security, which meant that they rarely dismiss employees – compared to big-sized enterprises – in times of economic crises (Grohmann 2007: 51 et seq.). Moreover, SMEs are mainly location-based, which means that company relocations or offshoring are rarely the case (Marzahl 2014: 16).

Summarized, all these figures show the economic importance of SMEs. Nevertheless, SMEs show deficiencies such as a weak management accounting (Euler Hermes 2006). Overall, these examples show that the majority of scientists represent the economic success of SMEs using statistical data that gives the impression that only SMEs are successful. It should be noted that numerical data can shade the truth regarding SMEs.

In the following, the specific features of SMEs will be considered more closely. This makes it possible to determine whether the prerequisites for a successful business are met.

2.1.2 Quantitative and qualitative criteria of SMEs

Quantitative and qualitative characteristics (Kolb 2006: 7; Schauf 2009: 5; Kästner 2012: 11; Henschel 2010: 2; Ihlau et al. 2013: 4; Abharamczik 2012: 14; Seehausen 2014: 120; Zaitsava 2011: 3; Osthoff 2013: 20; Schlüter 2007: 14) can be used to highlight the differences of SMEs in contrast to other enterprises such as big-sized enterprises. Thus, the following chapter is intended to show these differences.

2.1.2.1 Quantitative criteria of SMEs

As already stated in Chapter 2.1, quantitative criteria of SMEs can be measured based on certain characteristics. This includes the number of employees, followed by turnover (Kolb 2006: 7; Schauf 2009: 5; Kästner 2012: 11; Henschel 2010: 2; Ihlau et al. 2013: 4; Abharamczik 2012: 14; Seehausen 2014: 120; Zaitsava 2011: 3; Osthoff 2013: 20). There are also institutes such as the *Institute of Mittelstandsforschung Bonn (IFM)* and the *European Commission* (EC), which published the characteristics of SMEs' at certain intervals (Broich 2015: 17; Schröder 2017: 13; Eymannsberger 2017: 93; Kruse 2012: 17; Diederichs 2014: 41).

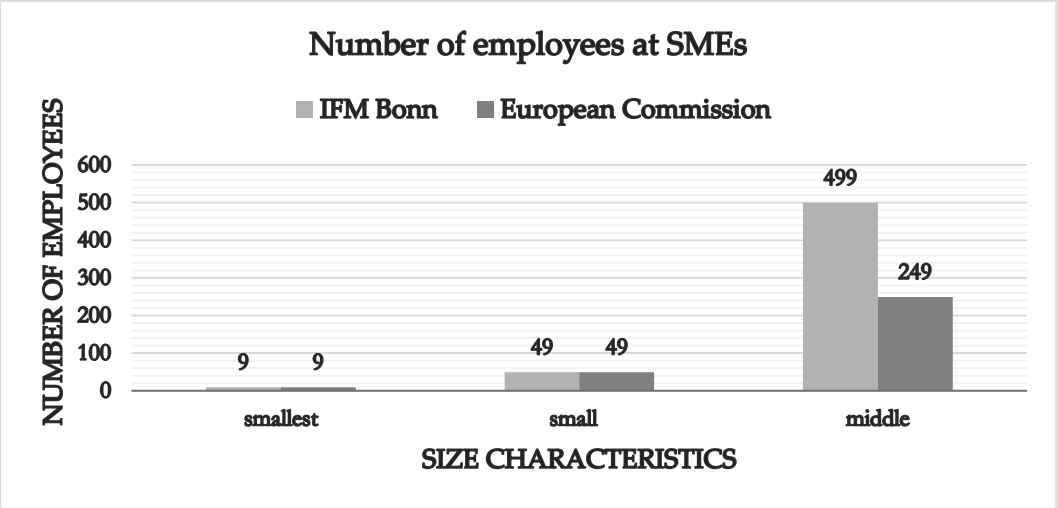
Moreover, there are other characteristics of SMEs that were examined by the IFM, such as economic progress. In connection with the quantitative characteristics (Kolb 2006: 7; Schauf 2009: 5; Kästner 2012: 11; Henschel 2010: 2; Ihlau et al. 2013: 4; Abharamczik 2012: 14; Seehausen 2014: 120; Zaitsava 2011: 3; Osthoff 2013: 20) of SMEs, the IFM (2017) took into account enterprises showing staff beyond 500 employees (IFM 2017) and whose yearly sales earnings is beyond 50 million euros (IFM 2017) as a small and medium-sized enterprise (IFM 2017).

In contrast, the explanation of the European Commission (EC) (Broich 2015: 17; Schröder 2017: 13; Eymannsberger 2017: 93; Kruse 2012: 17; Diederichs 2014: 41) considered the following: the EC regarded employees up to 249 as small and medium-sized. In view of turnover, the EC considered a turnover of fewer than 50

million euros as a criterion that contributes to being an SME (Broich 2015: 17; Schröder 2017: 13; Eymannsberger 2017: 93; Kruse 2012: 17; Diederichs 2014: 41).

The number of employees at SMEs is shown with the aid of Figure 1.

Figure 1: Differentiation of the number of employees in SMEs.



Source: Own depiction according to IFM Bonn (2017).

In this respect, enterprises with up to 9 employees (IFM 2017) and a turnover of 1 million euros per year (IFM 2017) are defined as small enterprises by the IFM (2017). In comparison, the European Commission (EC) characterized enterprises as small that generate a turnover of up to 10 million euros per year and employ less than 50 employees (Schauf 2009: 4; Broich 2015: 17; Schröder 2017: 13; Eymannsberger 2017: 93; Kruse 2012: 17; Diederichs 2014: 41).

Moreover, the European Commission (EC) likewise defines microenterprises by stating that they consist of fewer than 10 employees and a turnover or total assets of up to 2 million euros per year (Schauf 2009: 4 et seq.). With help of the shown data, it can be realized that the quantitative criteria are not clearly defined. However, the lack of a common definition can affect certain economic sectors. Numerical data is of significant importance in cases in which SMEs have to be promoted (Schauf 2009: 5) since the funds can thus be allocated fairly due to the size of the enterprise (Schauf 2009: 5).

The fact is that German SMEs can participate in the promotion of SMEs, which is subsidized by the German federal government. The funds include

measures that help to retain German SMEs since German SMEs contribute to Germany's welfare. Thus, SMEs have the opportunity to receive financial support and can use this to implement on-site management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149) or off-site management accounting (Horak 1995: 128; Pössl 1991: 60).

With the aid of Figure 1 (IFM 2017), it can be concluded that the number of employees (IFM 2017) plays a special role within the features shown (IFM 2017). This results from the fact that almost two-thirds of the German employees work for SMEs (IFM 2017). For this reason, the number of employees is used for the present study and is analyzed regarding outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) intentions, as shown in Figure 49. The aim is to find out at what company size (number of employees) (IFM 2017) SMEs are ready to outsource management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.). For this, the surveyed enterprises will be categorized according to predefined company sizes (number of employees).

In the following, the qualitative features of SMEs will be highlighted. It is intended to show that both criteria play an important role when it comes to implementing projects.

2.1.2.2 Qualitative Criteria of SMEs

Qualitative criteria include, for instance, the position of power and thus the behavior of the SME managing director or owner. This in turn meant that the manager has a greater position of power (Schlüter 2007: 14) in small enterprises since the small size meant that there is hardly any allocation of capacities (Schlüter 2007: 14). This enabled the managing director or owner to use his or her power over the stakeholders in favor of the enterprise. Moreover, all relevant decisions are made by the managing director or owner himself (Tegel 2015: 132), which, however, implies minimizing the enterprise since otherwise a straightforwardness would be lacking (Schauf 2009: 8).

However, such a mentality can delay or even hinder the creation of management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.). Another criterion that can be classified as qualitative is the integration of entrepreneurs and

enterprises, which in turn means that the entrepreneur can be held responsible for the liabilities of the enterprise (Kolb 2006: 10; Schauf 2009: 8; Kästner 2012: 16).

Moreover, qualitative criteria include employees. In this respect, it is well known that SMEs lack skilled staff (Thieme 2008: 66 et seq.). This lack is partly due to the demographic change in Germany, which is accompanied by an aging population (Thieme 2008: 66 et seq.).

Thus, SMEs are affected by demographic change and have difficulty in recruiting and finding qualified employees (Thieme 2008: 66 et seq.). Nevertheless, SMEs are expected to offer age-appropriate jobs and safeguard satisfied and healthy employees (Pfannstiel 2016: 23). However, SMEs often lag behind such expectations compared to big-sized enterprises, what can be seen from practice.

At the same time, many big-sized enterprises have already realized such necessities and, for instance, implemented health-promoting measures (Pfannstiel 2016: 23). However, SMEs have to struggle with similar measures due to financial constraints (Kolb 2006: 12) and know-how. Such conditions show that SME management needs to be supported and well-advised by experienced employees or consultants who point out the advantages of certain measures.

Another reason to assume that employees play an important role – employees are also part of the qualitative criteria of SMEs – is the familiarity between SME management and employees, which shows communication on a personal level and strengthens the collaboration (Knop 2009: 3; Kolb 2006: 11).

Another qualitative advantage can also be seen from that the SME management had established off-site networking as well that is regularly maintained and that helps others to adapt quickly (Knop 2009: 3). Such networking, which also includes networking with stakeholders such as suppliers, banks, or tax advisors (Knop 2009: 3), can also contribute to the further progress of the enterprise.

In particular, the relationship with banks is important for SMEs, as SMEs lack financial resources compared to big-sized enterprises (Kolb 2006: 12). Moreover, due to their legal structure, SMEs had no access to capital markets which also makes it difficult to raise capital (Kolb 2006: 12). Such barriers meant that SMEs have few opportunities to implement projects such as market research or advertising that can advance business (Klippstein et al. 2008: 368).

The following can be concluded: As shown by the scientists, SMEs show strengths such as a well-established off-site network structure and personal communication with employees (Knop 2009: 3; Kolb 2006: 11). Weaknesses were determined by a lack of skilled staff and age-appropriate work (Pfannstiel 2016: 23). In this respect, an aging population can be an aspect when it comes to employing skilled staff. Thus, it seems to be useful to expand the network structure also to other areas and persons. Areas can be, for instance, the social media (XING, LinkedIn, Facebook, Twitter, YouTube) which offers the opportunity to recruit skilled staff and can moreover be used to promote the own company. Some of these platforms offer free or less expensive designs for company websites. Due to good personal communication with their own employees, SME managers can ask their employees to be on social media for new employees. In this way, new employees can be found and besides, enterprise advertising be implemented.

In the following, the aspects of the strengths and weaknesses of SMEs should also be examined in addition to the criteria listed above.

2.2 STRENGTHS AND WEAKNESSES OF SMES

Outlining the strengths and weaknesses of SMEs should contribute to an overall image of SMEs that can be useful in implementing on-site management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149) or off-site management accounting (Horak 1995: 128; Pössl 1991: 60).

2.2.1 Strengths of SMEs

SMEs show various strengths that are related to their business activities. SMEs have flexible production processes that contribute to adapt to customer requirements at short notice, which is an undeniable essential competitive factor in the age of globalization (Knop 2009: 14). Moreover, enterprise management plays an active role in enterprise proceedings, which leads to autonomy in decision-making (Knop 2009: 14).

Furthermore, SMEs can be characterized by a strong loyalty and responsibility of employees (Berndt 2006: 9). Besides, SMEs consist of flat hierarchies that contribute to the rapid creation of measures as only a few management members have a decisive influence on decision-making (Tegel 2015:

132). Moreover, flat hierarchies can help to decentralize certain functions (Menzel et al. 2011: 93 et seq.).

Furthermore, SMEs show strengths such as the quality brand of products (Szyja 2015: 21).

In the matter of employee communication, it can be realized that enterprise management interacts with the aid of personal communication and instructions placed directly (Immerschitt et al. 2014: 23). Such behavior contributes to the motivation and identification of the employees with the enterprise. It also contributes to making employees feel valued. SMEs offer, however, much more than such strengths. For example, they are also known for their innovative capacity (Bullinger et al. 2009: 20).

Before highlighting the readiness and capacity of SMEs to innovate, this chapter will briefly outline the concept of innovation. Innovation is something new that is offered for sale and used by people (Ernst 2008: 8). Innovation is aimed at economic success and the strengthening of competitiveness in an enterprise. SMEs in particular should develop ideas that can help to strengthen their position on the market (Ernst 2008: 29).

Analyses show that large enterprises are much more active in innovation than SMEs and thus register more patents (Bullinger et al. 2009: 20). This situation can be confirmed by analyses that showed that almost 50 percent of large enterprises apply for a patent, while SMEs have only 15 percent of patent applications (Bullinger et al. 2009: 20).

Nevertheless, SMEs have all the qualifications to implement innovations, amongst others, due to their flexibility and positive corporate culture (Bullinger et al. 2009: 20). Thus, this fact certainly shows one of the strengths of SMEs, which only needs to be further developed. There will always be innovations due to market changes, increasing customer requirements, and challenges such as digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.), which has a special position regarding the dissertation topic.

Innovation can contribute to even higher productivity, and this gives Germany the chance to compete economically. Due to that SMEs mainly operate in the manufacturing industry, they are expected to produce something new (Spur 2009: 35). However, SMEs have always been innovative as can be seen from

inventions such as the treadle loom, even if this was a long time ago (Rinsche 2009: 48).

The following conclusions can accordingly be drawn: SMEs are confronted with challenges such as digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.). Digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) contributes to business agility (Gehrckens 2016: 80 et seq.). As a consequence, SMEs should not exclude themselves from this. Flat hierarchies and innovation capacity (Tegel 2015: 132; Rinsche 2009: 48) can contribute to an agile enterprise led by agile managers, employees, and teams which in turn contributes to meet the demands placed by stakeholders such as customers. Moreover, agility (Gehrckens 2016; 80 et seq.) can lead to greater creativity which can also contribute to initiating successful projects. In this respect, agile methods such as agile project management (Moran 2015: 76 et seq.), and osmotic communication (Moran 2015: 76 et seq.), can advance new projects such as an off-site management accounting (Horak 1995: 128; Pössl 1991: 60).

In the following, the weaknesses of SMEs are shown to outline the image of SMEs more precisely.

2.2.2 Weaknesses of SMEs

Recognizing the weaknesses can help to counteract them. The weaknesses of SMEs include among others a lack of resources (Bollessen 2014: 14; Seufert 2014: 33; Immerschitt et al. 2014: 2; Szyja 2015: 21). The lack of resources includes, for instance, financial constraints, lack of skilled staff, and deficiencies in corporate management (Bollessen 2014: 14; Seufert 2014: 33; Immerschitt et al. 2014: 2; Szyja 2015: 21). Such weaknesses can lead to projects not being implemented. The weaknesses are briefly discussed in the following, before a more detailed analysis regarding selected examples such as lack of skilled staff (Seufert 2014: 33) and corporate management (Schauf 2009: 15; Menzel et al. 2011: 93 et seq.; Behrends et al. 2005: 17; Immerschitt et al. 2014: 29) is carried out.

In view of the lack of skilled staff (Seufert 2014: 33), it can be realized that the manager insists on his power position, which prevents him from hiring skilled staff who have advisory skills (Knop 2009: 14). There are, however, other reasons that

hinder the recruitment of skilled staff (Bollessen 2014: 14), such as the financial budget (Kolb 2006: 12; Szyja 2015: 21), which is often the case for SMEs.

Financial difficulties include, for example, a lack of equity (Szyja 2015: 21). Such difficulties are often due to a lack of business strategies (Welter 2013: 27 et seq.). The reasons for missing strategies are often the result of management behavior that can be characterized by emotionality (Welter 2013: 27 et seq.).

In addition, management has difficulties with timely decision-making due to insufficient information provided by management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) or by an employee who is responsible for management accounting functions (Tegel 2015: 132). Scientists such as Seufert (2014: 33) considered the lack of specialist staff as the reason for incomplete information (Seufert 2014: 33).

Hiring skilled staff, however, fails due to a lack of specialized training measures. Another issue that is often ignored is that a large number of enterprise issues are rarely communicated with employees (Immerschitt et al. 2014: 29). Moreover, SMEs have strategic difficulties that can be perceived as a result of strategic decisions made quickly and carelessly by management (Tegel 2015: 132), and behavior that can be characterized by trial-and-error procedures, which, however, can be very precarious in situations that involve risks (Menzel et al. 2011: 93 et seq.).

In addition, there is no division or transfer of tasks and this means that the manager must perform tasks that are not part of his area of responsibility (Szyja 2015: 21).

As a result, the main aspects of this chapter are the weaknesses in decision-making (Tegel 2015: 132) and corporate management (Schauf 2009: 15; Menzel et al. 2011: 93 et seq.; Behrends et al. 2005: 17; Immerschitt et al. 2014: 29). Suchlike weaknesses can, however, provide the basis for a learning organization and change management which can become a success factor. The weaknesses can be minimized by the help of the use of knowledge management software tools (Tallyfox 2020) that contribute to knowledge progress and thus to a qualified information supply, decision-making, and corporate management (Schauf 2009: 15; Menzel et al. 2011: 93 et seq.; Behrends et al. 2005: 17; Immerschitt et al. 2014: 29). Knowledge

management software tools (Tallyfox 2020) contribute to knowledge identification and knowledge acquisition. Suchlike projects can be realized with the aid of software such as Tallyfox (2020) which is offered at a low price. Tallyfox (2020), for instance, offered mobile apps, data exchange in real-time, free demo version, and very moderate pricing policies (Tallyfox 2020).

Regarding the weaknesses, selected weaknesses such as the lack of skilled staff (Bollessen 2014: 14) and deficiencies in corporate management (Immerschitt et al. 2014: 29) will be analyzed in particular.

Thus, the subject of skilled staff will (Seufert 2014: 33) be considered in the following chapter first, followed by the corporate management (Schauf 2009: 15; Menzel et al. 2011: 93 et seq.; Behrends et al. 2005: 17; Immerschitt et al. 2014: 29) in SMEs.

2.2.2.1 Skilled staff in SMEs

There is a shortage of skilled staff in Germany due to various reasons (Bollessen 2014: 14). In this respect, the shortage of skilled staff can have an impact on enterprises and thus on the German economy (Bollessen 2014: 14). Moreover, the lack of skilled staff can also jeopardize Germany´s prosperity, which in the worst case, can lead to economic stagnation. Analyses (Bollessen 2014: 14) showed that, in the next 20 to 30 years, areas such as management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) will have difficulties in finding and hiring qualified employees (Bollessen 2014: 15 et seq.). SMEs in particular are usually confronted with the challenges of skilled labor shortages (Bußmann 2015: 47). The reason for this problem is due to that SMEs are less known than big-sized enterprises (Bußmann 2015: 47).

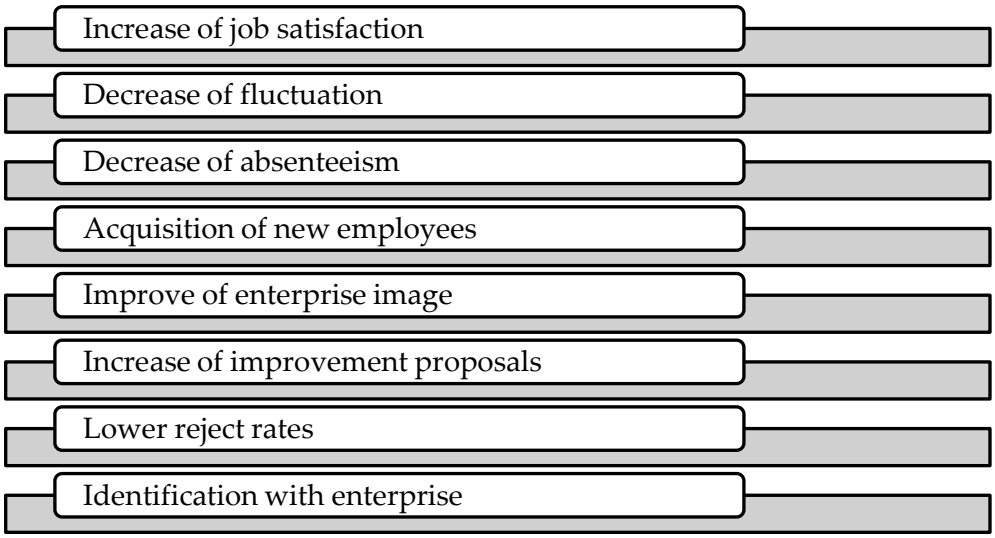
Nevertheless, there are several opportunities for SMEs to fill this gap. One of the opportunities is to employ older people until their retirement age and not, as it is usually the case, to let them retire early (Müller 2011: 170). Such measures can also contribute to the establishment of internal experience exchange groups between older and younger employees. This can increase motivation and team spirit. In addition, such measures can help to ensure that know-how remains in the enterprise for longer. Moreover, enterprises should meet the demands placed on

them through training and measures that contribute to maintaining the health of their employees (Steinert 2013: 226).

In this respect, it would certainly make sense if SMEs were to implement measures to improve their image. This is due to that SMEs, compared to big-sized enterprises, do not show their advantages at first glance (Dömötör 2011: 13). Consequently, they have difficulties in recruiting experts such as management accountants, however, this is important due to challenges such as digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.). The employment of experts or other skilled staff, who are mainly employed to generate ideas, requires oftentimes employee participation regulation such as incentive regulations, which, however, cannot always be met by SMEs due to financial constraints (Dömötör 2011: 13). However, SMEs will be forced to implement incentive regulations if they intend to compete. There are various employee participation regulations (Backes et al. 2013: 6; Schumacher 2010: 122 et seq.), and the most common form is one that involves employees in the enterprise success (Backes et al. 2013: 6).

There are surely many more opportunities to be competitive. In this respect, the opportunities contribute to benefits such as high job satisfaction or identification with the job (Schumacher 2010: 122 et seq.). As SMEs lack skilled staff, some of the benefits of incentive regulations are highlighted using the following figure:

Figure 2: Advantages of incentive regulations.

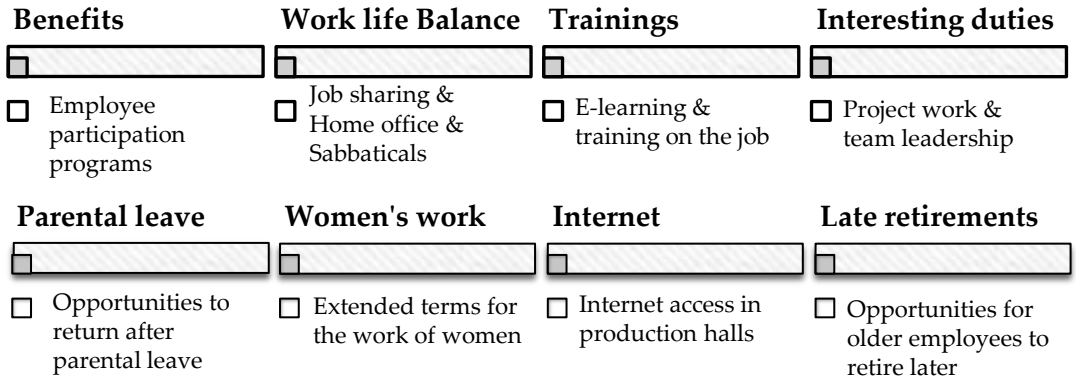


Source: Own depiction according to Schumacher (2010: 122 et seq.).

Even if incentive regulation is costly, the use of such measures can also help to find skilled staff such as management accountants. Especially regarding the digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.), enterprises such as SMEs will be forced to employ skilled staff (Volkens et al. 2017: 44). In this view, it can be noted that SMEs need to adapt the skills of their employees to a more digitalized working environment (Volkens et al. 2017: 44). There is an ongoing debate about whether challenges such as the digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) will have an extreme impact on the German employment market.

Irrespective of such considerations, enterprises, especially SMEs, should take the following measures to attract and retain skilled staff (Schumacher 2010: 122 et seq.):

Figure 3: Measures to attract and retain skilled staff.



Source: Own depiction according to Schumacher (2010: 122 et seq.).

Summing this up, it becomes clear that SMEs must implement many employee retention strategies when it comes to employing skilled staff as they seem less attractive compared to big-sized enterprises (Dömötör 2011: 13). Moreover, it turns out that the difficulty in retaining skilled staff is exacerbated by digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.), which requires expert skills such as know-how in analytics, Big Data, and applications related to digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.). However, the practice shows that experts often preferred to work for big-sized enterprises as they offer attractive employee programs and the opportunity to develop further.

This helps to analyze the influence of digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) more precisely with the aid of Chapter 6.

Though, within the first steps, the issue of corporate management (Schauf 2009: 15; Menzel et al. 2011: 93 et seq.; Behrends et al. 2005: 17; Immerschitt et al. 2014: 29) is addressed with the aid of the next chapter.

2.2.2.2 Corporate management in SMEs

The topic of corporate management (Schauf 2006: 15) will be described in the following chapter.

There are various explanatory approaches to describe the term corporate management. According to Schauf (2009: 15), corporate management can be considered both a matter of responsibility and coordination (Schauf 2006: 15). In this conjunction, not every SME showed responsibility when it comes to corporate management (Menzel et al. 2011: 93 et seq.). Failures in mismanagement were often due to that thoughts about a decision made by enterprise management were not reflected or even tasks were not delegated (Menzel et al. 2011: 93 et seq.).

Moreover, corporate management involves the behavior of management to achieve enterprise goals (Schauf 2009: 15; Menzel et al. 2011: 93 et seq.; Behrends et al. 2005: 17; Immerschitt et al. 2014: 29). For a sustainable business, SMEs need flexible managers, problem-solvers, with an intrinsically motivated and positive attitude toward enterprise policy (Sauermann 1997: 65). However, whether this was always the case requires further analysis. The following possible approaches are shown that can help to minimize shortcomings in corporate management (Schauf 2009: 15; Menzel et al. 2011: 93 et seq.; Behrends et al. 2005: 17; Immerschitt et al. 2014: 29). This approach is intended to help to identify the shortcomings of corporate management (Schauf 2009: 15; Menzel et al. 2011: 93 et seq.; Behrends et al. 2005: 17; Immerschitt et al. 2014: 29) in SMEs.

In any case, to achieve the aforementioned conditions, it is important to lay down certain rules (Behrends et al. 2005: 17).

Rules may, for instance, relate to strategic enterprise planning. According to Behrends et al. (2005: 17), SMEs disregarded strategic measures, although they were integrated in corporate management (Behrends et al. 2005: 17).

Nevertheless, strategic planning in SMEs makes sense in any case as it simplifies internal processes and forces ideas and projects (Martin et al. 2006: 212 et seq.). As a result, strategic planning can be helpful when implementing on-site management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149) or off-site management accounting (Horak 1995: 128; Pössl 1991: 60).

Other studies specifically examined *small enterprises* and found that they are also less active in strategic planning compared to big-sized enterprises (Martin et

al. 2006: 212 et seq.). This is hardly surprising since it would be an imbalance if small enterprises were more involved in strategic planning than medium-sized enterprises. According to Martin et al. (2006: 212 et seq.), there was less need for corporate management in small enterprises if the processes were well organized, and the enterprise was of a manageable size (Martin et al. 2006: 212 et seq.). Moreover, it is common in small enterprises for one person to perform several functions as long as he or she is not overwhelmed by work.

Furthermore, small enterprises can achieve faster solutions than large enterprises due to short communication lines and less competition among managers (Martin et al. 2006: 212 et seq.). According to Martin et al. (2006: 212 et seq.), such conditions therefore minimize the need for corporate management in small enterprises (Martin et al. 2006: 212 et seq.).

It can be stated that SMEs lack a number of requirements for successful corporate management (Schauf 2009: 15; Menzel et al. 2011: 93 et seq.; Behrends et al. 2005: 17; Immerschitt et al. 2014: 29). For instance, there is little delegation of tasks, which indicates that the manager either performs all tasks himself (Menzel et al. 2011: 93 et seq.) or many tasks cannot be implemented due to various reasons. Moreover, proper use of the four essential management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.), which is, for instance, *planning* is also missing (Behrends et al. 2005: 17).

This helps to analyze other weaknesses. For this reason, management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) is analyzed in more detail below.

3 MANAGEMENT ACCOUNTING AND ITS CHALLENGES AND CHANCES

In the following, management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) is considered, amongst others, under the aspect of deficiency regarding management accounting know-how. This consideration should serve to show challenges and chances for SMEs. For some years now, there have been corporate insolvencies (Krause et al. 2001: 8; Peemöller 1990: 30) in German entrepreneurship. This can often be taken from the media and, as a consequence, raises the question of what reasons are likely to have caused enterprises to become unbalanced? In many cases, the reasons are not given to outsiders.

This chapter aims first to define the terminology of management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) and afterward highlight the course of management accounting. This is relevant as it reveals how adaptable management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) has been for many years. Subsequently, the main functions of management accounting are shown (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.).

Afterward, quantitative and qualitative features of management accounting (Müller 2014: 89; Vedder et al. 2011: 79) are explained, followed by the expert and general duties (Gleich et al. 2017: 160; Hahn 2013: 186; Reichmann et al. 2017: 7) in the field of management accounting. In view of the lack of management accounting (Klett et al. 2010: 6; Euler Hermes 2006), on-site and off-site management accounting (Horak 1995: 128; Pössl 1991: 60) are reviewed in detail and, in doing so, the scope of off-site management accounting (Horak 1995: 128; Pössl 1991: 60) in SMEs is highlighted, followed by the reasons for off-site management accounting (Horak 1995: 128; Pössl 1991: 60) in SMEs.

This chapter will be concluded with help of the choice of individual businesses for off-site management accounting (Horak 1995: 128; Pössl 1991: 60) as

well as the advantages and disadvantages of off-site management accounting (Horak 1995: 128; Pössl 1991: 60) for SMEs.

First, management accounting is explained in detail in the following chapter.

3.1 DEFINITION OF THE TERM MANAGEMENT ACCOUNTING

The definitions and descriptions of the term management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) are intended to contribute to the view of management accounting from different perspectives. Within the scientific literature, there are various explanations for this terminology, and the definitions and descriptions of management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) shown below should not be considered conclusively.

Figure 4: Definitions and descriptions of management accounting.

Authors	Definitions & Descriptions
(Zimmermann 2001: 10)	"Management accounting determines differences between plan and actual values".
(Jung 2011: 5)	"Management accounting contributes to achieve enterprise goals".
(Troßmann 2018: 4)	"Management accounting supports the leadership of the enterprise".
(Jäger 2003: 25)	"Management accounting questions & offers solutions".
(Friedl 2019: 38)	"Management accounting will essentially be influenced by digital transformation".
(Lingnau et al. 2017: 137 et seq.)	"Management accounting will face implications caused by digital transformation".

Source: Own depiction according to Zimmermann (2001: 10); Jung (2011: 5); Troßmann (2018: 4); Jäger (2003: 25); Friedl (2019: 38); Lingnau et al. (2017: 137 et seq.).

With help of the definitions and descriptions shown, it can be realized that management accounting contributes to performing different tasks (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.). It becomes clear that it is a support function of the management (Troßmann 2018: 4). Moreover, it can be assumed that it intends to become successful. This in turn contributes to the assumption that management accounting must have a high level of competence (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) in the enterprise. Moreover, management accounting is defined and described (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) in such a way that it is subject to change through digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.).

In this respect, it can be assumed that management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) is not a new occurrence. It has a long history which will be highlighted with the aid of the next chapter. This is to show that management accounting can withstand change, which is essential in today's economic world and in particular in view of challenges caused by digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.).

3.1.1 Historical course of management accounting

There have been various researchers who investigated the origin of management accounting, such as Kam and Meyer (1990: 1 et seq.; 1996: 19). According to Kam and Meyer (1990: 1 et seq.; 1996: 19), management accounting is a result of a concept which considers transactions on two different accounts (Kam 1990: 1 et seq.; Meyer 1996: 19) and can be traced back to the thirteenth century (Kam 1990: 1 et seq.; Meyer 1996: 19).

The history reveals that a professional term for the management accountant was first applied in the fifteenth century (Beck 1998: 24; Ossadnik 2003: 7; Krause et al. 2001; 26; Peemöller 1990: 27). This employee became the "Countroller" (Beck 1998: 24; Ossadnik 2003: 7; Weber et al. 2008: 3). At that time, French authorities

were likewise concerned with tasks and responsibilities that can be attributed to management accounting (Ossadnik 2003: 7; Krause et al. 2001: 26).

In the seventeenth century, management accounting in the USA was performed by an accountant who was charged with controlling the government budget (Ossadnik 2003: 7; Krause et al. 2001: 26). Moreover, the eighteenth century showed that the professional term changed from that time on to "Comptroller" (Heupel et al. 2013: 7; Beck 1998: 24; Ossadnik 2003: 7; Weber et al. 2008: 3).

In 1880, the first American company to employ a management accountant was the U.S. railway enterprise Atchinson, Topeka & Santa Fe Railway System (Serfling 1983: 18; Krause et al. 2001: 26; Peemöller 1990: 27; Horváth et al. 2014: 15).

However, his duties were limited to the financial part of corporate management and must be distinguished from the further progress of the management accounting profession (Serfling 1983: 18). Further investigations show that General Electrics in the USA was the first *industrial enterprise* that occupied a management accountant in 1892 due to a lack of entrepreneurial controlling bodies (Serfling 1983: 18; Krause et al. 2001: 26; Peemöller 1990: 27).

Moreover, challenges such as the global economic crises contributed to a functional change in management accounting, the aim of which was now both to provide information and to support corporate management (Beck 1998: 24; Krause et al. 2001: 26; Peemöller 1990: 28).

Thus, management accounting stabilized in the 1920s, primarily in the USA, due to challenges such as the automation related to fixed costs along with reduced entrepreneurial flexibility and the need for practicable management tools (Ossadnik 2003: 7).

Consequently, the US was the first nation to establish the *Controller's Institute of America*, which was founded in 1931, and along with such progress came the first journal in 1931, *The Controller*, published in 1931, and in 1944, the *Research Institute Controllership Foundation* was established (Krause et al. 2001: 26; Peemöller 1990: 29).

Toward the end of the 1960s, management accounting had established itself in Germany. One reason for the hesitant progress of management accounting in Germany could have been the post-war economic boom, which did not require diversification (Ossadnik 2003: 8; Krause et al. 2001: 28).

In comparison to the USA, many organizations were founded in Germany between the late 1960s and mid-1970s to advance management accounting in Germany in the way the *Controller Academy in Munich* intended (Krause et al. 2001: 29; Peemöller 1990: 31). Moreover, topics such as enterprise insolvencies (Krause et al. 2001: 8; Peemöller 1990: 30) concerned SMEs in the 1980s and thus supported the application of tools related to management accounting (Krause et al. 2001: 8; Peemöller 1990: 30). The 1990s brought internalization, and with this challenge, enterprises were forced to expand the function of management accounting (Peemöller 1990: 31).

Management accounting has thus developed into a functional institution, especially in large enterprises, and SMEs can also be cited as an example of the establishment of this concept (Peemöller 1990: 31).

Today, management accounting has also established itself in medium-sized enterprises and in other organizations such as public administrations to operate in a goal-oriented manner (Heupel et al. 2013: 7).

History shows that management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) can adapt to change and master certain requirements, and this ability is also playing a significant role today. Management accounting is expected to provide information to management to select solutions (Pleitner 1989: 446).

Pleitner (1989: 446) pointed out the importance to implement integrated computerized management information systems (Pleitner 1989: 446) to be able to offer information (Pleitner 1989: 446), however, also stated that such requirements would entail further requirements (Pleitner 1989: 446). However, this matter took on a different approach. The practice showed that integrated computerized management information systems (MIS) (Pleitner 1989: 446) had been used for many years now and used for topics such as future prognosis and trend assessments (Goyal 2014: 3 et seq.).

In any case, the 1990s have caused major changes in management accounting. Thus, the focus shifted to the collaboration with off-site management accounting consultants (Accenture 2018) and thus to the creation of concepts that contribute to the improvement of management skills in medium-sized enterprises, which were analyzed by Pössl (1991: 31 et seq.). According to Pössl (1991: 39), issues can be

solved by mandating an off-site management accounting consultant who can provide appropriate information and interpret data (Pössl 1991: 39).

As a result, scientists recognized that the behavioral aspect (Pleitner 1989: 446) is becoming increasingly important within management accounting and suggested off-site consultants as a solution (Pössl 1991: 39), however, this was based on superficial considerations. Moreover, behavioral considerations within management accounting have been the focus of scientists for many years. This can be taken from various studies. The following table excerpt provides an overview of studies that deal with behavioral accounting (Table 3). The list of these studies shows that behavioral aspects have played an important role in management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) for six decades. The first analyses were carried out in the United States in the 1960s and were extended to the UK by the end of the 1970s. German scientists were hesitant at the time and began to analyze behavioral aspects within management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) more intensively at a later stage.

The table contains a total of 18 studies, six studies from Anglo-American countries, six studies from the English-speaking countries, and six studies from German-speaking countries.

Table 3: Studies on behavioral accounting.

US studies on behavioral accounting			
No.	**Author**	**Year published**	**Title**
1	Benston	1966	Multiple regression analysis of cost behavior
2	DeCoster/Fertakis	1968	Budget-induced pressure and its relationship to supervisory behavior
3	Bruns/Waterhouse	1975	Budgetary control and organization structure
4	Otley	1978	Budgetary use and managerial performance
5	Simons	1987	Accounting control systems and business strategy
6	Lord	1989	The development of behavioral thought in accounting
UK studies on behavioral accounting			
No.	**Author**	**Year published**	**Title**
1	Drenth et al.	1979	Participative decision making
2	Healy	1985	The effect of bonus schemes on accounting decisions
3	Merchant	1985	Budgeting and the propensity to create budgetary slack
4	Keasey/Watson	1991	An agency perspective of auditor changes in small firms

5	Berry et al.	2006	The effect of business advisors on the performance of SMEs
6	Manley	1982	A market view on current cost accounting
German studies on behavioral accounting			
No.	**Author**	**Year published**	**Title**
1	Thonet/Poensgen	1979	Managerial Control and Economic Performance in Western Germany
2	Pleitner	1980	Small firms and the information problem
3	Ridder et al.	2006	Managing implementation processes
4	Hammann et al.	2009	Values that create value: Socially responsible business practices in SMEs
5	Lohr	2012	Specificities of managerial accounting of SMEs: Case studies from the German industrial sector
6	Eierle/Schultze	2013	The role of management as a user of accounting information: Implications for standard-setting

Source: Own depiction

As can be seen from the table, German scientists began to consider behavioral aspects in management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) at the end of the 1970s, particularly at the beginning of the 1980s, which intensified in the 2000s. One reason could be the financial crisis of 2008, which contributed to making human error visible due to human behavior. In the following, some of the German studies listed in the table are briefly evaluated. This should contribute to demonstrating the behavioral approach within management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.), as the behavioral approach plays a role to some extent within this presented work.

For this reason, an excerpt of the listed studies that cover the topic of information supply (Ridder et al. 2006: 107) will be shown in the following. It is intended to gain more insights in view of this topic.

3.1.1.1 Study of Ridder et al. (2006): Managing creation processes (Ridder et al. 2006: 94 et seq.).

The results show that managers in key positions (Ridder et al. 2006: 94) are more willing to accept change than managers of the middle professional level (Ridder et al. 2006: 94) and that the acceptance of information supply depends on the objectives of an organization (Ridder et al. 2006: 107). Moreover, the study shows that the higher the professional level of the manager, the greater the intention to manipulate the behavior of lower-class managers and stakeholders using relevant information (Ridder et al. 2006: 94). Thus, the study shows that behavioral aspects played a significant role in accounting in the 2000s, although in this case, managers who are engaged in the public office were analyzed (Ridder et al. 2006: 107). Ultimately, this example can be applied to enterprises, with their managers, that are also located in other industrial sectors, including SMEs.

3.1.1.2 Study of Lohr (2012): Specificities of Managerial Accounting of SMEs: Case studies from the German Industrial Sector (Lohr 2012: 35 et seq.).

Assuming that SMEs lack essentials such as management accounting, Lohr (2012: 35 et seq.) researched the reasons for such assumptions. The analyses show that SMEs do not implement management accounting and thus the opportunity for information supply for enterprise management due to an unequal cost-benefit ratio and a well-established position in the market (Lohr 2012: 35 et seq.). The study shows that SMEs are aware of their strong position within the German economy, however, do not realize the need for elementary management accounting competencies (Lohr 2012: 35 et seq.). The findings of Lohr (2012: 35 et seq.) moreover show that SMEs and hence SME management are far from strategy formulation, cost calculation, and concepts such as balanced scorecards or key figures (Lohr 2012: 51). Furthermore, there are no standard operating procedures within SMEs that could contribute to the exchange of views on business concepts or challenges such as digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.).

3.1.1.3 Study of Eierle et al. (2013): The Role of Management as a User of Accounting Information: Implications for Standard Setting (Eierle et al. 2013: 155).

Eierle et al. (2013: 155) also analyzed issues related to behavioral management accounting (Eierle et al. 2013: 155), questioning whether standard setters develop accounting standards (Eierle et al. 2013: 15) that can be used for decision making and analyzed the behavior of enterprise management (Eierle et al. 2013: 155) regarding the application of information (Eierle et al. 2013: 155). The results regarding standard setters show that enterprise management does not pay attention to the importance of information supply (Eierle et al. 2013: 155).

3.1.1.4 Findings from the German studies

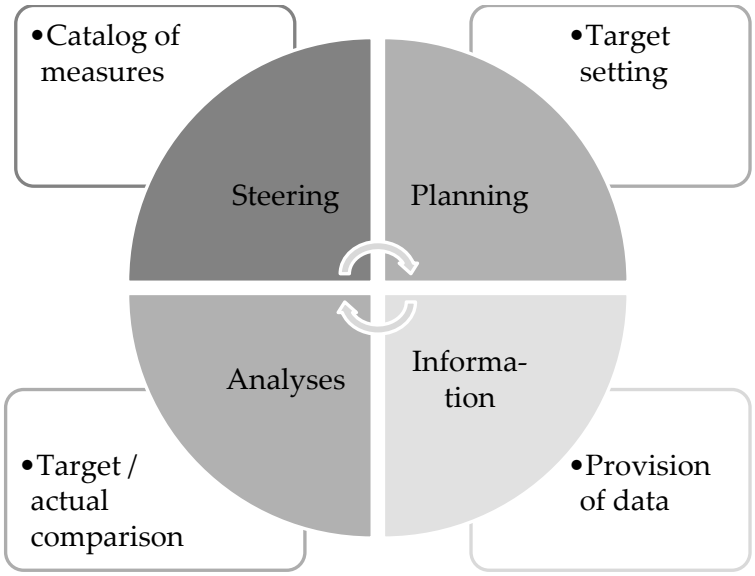
The studies exemplified show that there is a lack of acceptance and understanding on the part of managers (Eierle et al. 2013: 155) when it comes to management accounting which involves essential topics such as the supply of information (Eierle et al. 2013: 155). Lack of acceptance and understanding (Eierle et al. 2013: 155) can, however, lead to hard-to-find errors caused by employees who are concerned with management accounting. Enterprise management can counter this by informing the staff concerned regarding management accounting and making strict, and above all, understandable requirements for management accounting. This undoubtedly requires at least an existing on-site management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149) and an understanding of the importance of management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) on the part of the enterprise management. Moreover, enterprises lack fundamental competencies (Gleich et al. 2016: 73 et seq.; Kaltenbacher 2011: 78; Piezonka 2013: 13) regarding management accounting, which can help even to set up a management accounting (Lohr 2012: 35 et seq.). In this respect, a skeptical and indifferent mindset and the resulting behavior can be realized from the examples shown. Whether these mindsets are still valid, should be researched with help of the own study. Thus, the studies listed here serve as comparative examples.

In the following, the main functions of management accounting (Mehlan 2007: 11; Tschandl 2012: 16) will be shown, as it is related to the topic of information supply. In this respect, information supply represents one of the four main functions of management accounting (Mehlan 2007: 11; Tschandl 2012: 16).

3.1.2 Functions of management accounting

Management accounting is based on four principles (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.). These four principles should be performed properly to meet expectations placed amongst others by stakeholders and to safeguard the existence of an enterprise. The four main functions of management accounting are planning, information, analysis, and steering (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) and are often represented in the scientific literature by a loop model (Mehlan 2007: 11; Tschandl 2012: 16; 2010: 68 et seq.). The following figure shows the four functions of management accounting (Mehlan 2007: 11; Tschandl 2012: 16) with help of a self-created loop model of management accounting.

Figure 5: Four (4) functions of management accounting.



Source: Own depiction according to Tschandl & Erichsen (2012: 16; 2010: 68 et seq.).

The four functions of management accounting (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) are briefly explained in the following, regardless of whether they concern operational or strategic management accounting (Erichsen 2010: 68 et seq.). This is due to that both operational and strategic management accounting include the same main functions. The initial phase of any business activity includes the planning phase, in which the target values are defined (Bals et

al. 2014: 9). Moreover, this phase is characterized by goals formulated that must be achieved (Bals et al. 2014: 9). The first phase is followed by the realization phase, which requires data to be prepared in view of information supply (Bals et al. 2014: 9). The aim is to provide enterprise management with feedback that can help determine whether the goals set can be achieved (Bals et al. 2014: 9). The third phase is defined by the analysis regarding the achievement of goals (Bals et al. 2014: 9). The fourth phase, which is the steering phase, is intended to define measures that contribute to the realization of the goals (Bals et al. 2014: 9).

If required, countermeasures can be initiated (Bals et al. 2014: 9). The management accounting loop model is hence used to detect and avoid deviations (Bals et al. 2014: 9).

Furthermore, management accounting has to offer more than the four functions mentioned above (Bals et al. 2014: 9). Management accounting is always expected to process and provide data (Bals et al. 2014: 9). Management often expects well-prepared data, and this is required in particular by SME management. However, SMEs often lack management accounting or carry out management accounting activities on a small scale (Klett et al. 2010: 6; Euler Hermes 2006). In addition, in SMEs, the practice shows that management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) are oftentimes performed by the managing director or owner himself (Klett et al. 2010: 6; Tegel 2015: 132; Deloitte 2008: 7 et seq.), who does not necessarily have management accounting know-how (Klett et al. 2010: 6; Tegel 2015: 132; Deloitte 2008: 7 et seq.).

Moreover, practice shows that SMEs often use accounting data or contact their tax advisor (Ossadnik et al. 2010: 44) to obtain data. However, such data are often not sufficient to make forecasts.

The following conclusion can be drawn: The advantage of the management accounting loop model (Bals et al. 2014: 9) can be seen in the fact that it can be used to assess the existence and performance of certain management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) within enterprises and in a further step to question which of the management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) are suitable for on-site or off-site management accounting (Horak 1995: 128; Pössl 1991: 60) and thus for outsourcing projects (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11). For this

reason, the management accounting loop model (Tschandl 2012: 16) will serve as a model for the own research to question the scope of use of these functions.

The next chapter deals with the quantitative and qualitative features (Müller 2014: 89; Vedder et al. 2011: 79) of management accounting. It is intended to identify characteristics that can contribute to opt for off-site management accounting (Horak 1995: 128; Pössl 1991: 60).

3.1.3 Quantitative and qualitative features of management accounting

This chapter aims to briefly provide a general overview of the tasks of management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) and to decide which of the presented features should be realized within one's own enterprise and which are suitable to be performed by service partners. Within quantitative management accounting, the gathering and evaluation of numerical results play an important role (Koop et al. 2001: 207 et seq.). Various enterprise sectors apply this approach by using measured variables to calculate variations (Koop et al. 2001: 208). Furthermore, quantitative management accounting includes short-term and correspondingly operational aspects and, as a consequence, tends to take the material part into account (Müller 2014: 89).

In this respect, operating figures such as return on sales or cash flow can be cited as examples (Hoch 2003: 11). Moreover, quantitative management accounting is comparable to a way of thinking that is characterized by interdependencies (Hoch 2003: 11).

In addition to the evaluation of quantitative values and business ratios, qualitative management accounting also seems to be indispensable as it offers the opportunity of evaluating results on account of strategic goals (Koop et al. 2001: 208). Moreover, it is beneficial to assess above all the decision-making of management (Koop et al. 2001: 208). In conjunction with this approach, a brief explanation of qualitative management accounting (Müller 2014: 89) is outlined.

Qualitative management accounting takes into account human capabilities and considers both tangible and intangible aspects as it focuses on operational and strategic goals (Müller 2014: 89). As examples, indicators such as employee or customer satisfaction can be mentioned (Müller 2014: 89).

In the next text section, two areas of application of quantitative and qualitative management accounting (Müller 2014: 89; Vedder et al. 2011: 79) are briefly presented as examples. This is intended to gain insight into the topic of quantitative and qualitative management accounting (Müller 2014: 89; Vedder et al. 2011: 79).

On closer examination, quantitative management accounting includes cost monitoring and consequently data analysis as it is the case with diversity training and diversity management accounting (Vedder et al. 2011: 79). Diversity training can include training modules aimed at acquiring and improving soft skills to create a good communication basis with employees or customers (Vedder et al. 2011: 79).

In this conjunction, qualitative management accounting (Vedder et al. 2011: 79) efforts to determine by means of surveys how employees experience diversity management, what improvements they want to achieve, or how they value equal opportunities for women (Vedder et al. 2011: 79). The second example, which deals with distribution management accounting, shows that quantitative management accounting consists of the analysis of logistics costs, the application of distribution performance-based costing, and the generation of operating figures, while qualitative management accounting is more focused on the evaluation of supply reliability or fulfillment of customer's requirements (Schögel 2012: 445). Thus, both qualitative and quantitative management accounting can support analyzing the market progress to meet market requirements (Schögel 2012: 445).

Summing up, the examples show that enterprises like SMEs can use various instruments (Koop et al. 2001: 207 et seq.; Schögel 2012: 445) of quantitative and qualitative management accounting which can help to develop the enterprise. In this respect, it appears reasonable that the choice of instruments (Koop et al. 2001: 207 et seq.; Schögel 2012: 445) should be based on corporate strategy and company-specific features.

In addition to the quantitative and qualitative features (Müller 2014: 89; Vedder et al. 2011: 79), the expert and general duties (Gleich et al. 2017: 160; Hahn 2013: 186; Reichmann et al. 2017: 7) of management accounting can also play an important role when it comes to implementing an off-site management accounting (Horak 1995: 128; Pössl 1991: 60), and this will be shown with the aid of the next chapter.

3.1.4 Expert and general duties of management accounting

Some of the expert and general duties (Gleich et al. 2017: 160; Kraemer 1993: 137 et seq.; Reichmann et al. 2017: 7; Hahn 2013: 186; Gleich 2008: 253; Winter 2007: 157; Hahn et al. 1999: 83) of management accountants are highlighted below. In this sense, enterprises such as SMEs can use a tabular list to indicate which tasks are suitable for in-house execution and which for outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11).

There are certainly other ways of categorization. To narrow the topic down, the focus will however be on these two categories.

Table 4: Expert and general duties of management accounting.

Expert duties of management accounting	General duties of management accounting
Revenue accounting (Gleich et al. 2017: 160)	Standardized reporting and evaluation (Gleich 2008: 253)
Cost planning and cost analyses (Kraemer 1993: 137 et seq.)	Individual reporting (Gleich 2008: 253)
Problem identification and problem-solving (Kraemer 1993: 137 et seq.)	Risk management (Winter 2007: 157)
Capital budgeting and defining of investment management accounting measures (Gleich 2008: 253)	Evaluation of data from accounting and finance (Hahn et al. 1999: 83)
Provision of IT solutions for specific issues (Reichmann et al. 2017: 7)	Budget planning and analysis (Hahn et al. 1999: 83)
Creation of projects (Reichmann et al. 2017: 7)	Overhead value analysis (Hahn et al. 1999: 83)
Corporate planning (Hahn 2013: 186)	Gathering and processing of information and data (Hahn 2013: 186)
Providing result-oriented data (Hahn 2013: 186)	Coordinating role (Hahn 2013: 186)

Source: Own depiction according to Gleich et al. (2017: 160); Kraemer (1993: 137 et seq.); Reichmann et al. (2017: 7); Hahn (2013: 186); Gleich (2008: 253); Winter (2007: 157); Hahn et al. (1999: 83).

Given the examples, the following can be drawn: SMEs that show weaknesses regarding the lack in management accounting (Klett et al. 2010: 6; Euler Hermes 2006) should refer to experts who are involved in problem identification and problem-solving (Kraemer 1993: 137 et seq.) and the creation of projects (Reichmann et al. 2017: 7) which impacts business in a positive manner and can offer solution-oriented business support and thus can strengthen SMEs in their plans to outsource (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.). In this respect, this tabular comparison can also contribute to answering the research question posed in Chapter 1.1, which is about the reasons given by SMEs for off-site management accounting (Horak 1995: 128; Pössl 1991: 60). This means that the lack of any of the tasks listed above can be considered a reason for outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11).

Within the scope of the research question, it moreover makes sense to take a closer look at the option of an on-site management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149) and off-site management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149; Horak 1995: 128; Pössl 1991: 60). Thus, in the following, the option of on-site management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149) and off-site management accounting (Horak 1995: 128; Pössl 1991: 60) will be highlighted.

3.2 ON-SITE AND OFF-SITE MANAGEMENT ACCOUNTING

Management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) is predestined for various forms of organization. It thus offers the possibility of implementing on-site management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149) or off-site management accounting (Horak 1995: 128; Pössl 1991: 60).

In order to come to a decision regarding an on-site management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149) or off-site management accounting (Horak 1995: 128; Pössl 1991: 60), SMEs can use a decision matrix (Wetterer 2005: 58). With the aid of a decision matrix, for instance, enterprises can analyze whether certain characteristics correlate with each other (Wetterer 2005:

58). The decision matrix should be set up in collaboration with the off-site management accounting consultant (Accenture 2018) based on company-specific aspects. For this reason, a general decision matrix is not shown at this point since this seems less effective.

In this respect, there are additional resources that can help to support decision-making processes, such as decision tables, decision trees, or benefit analyses (Wiederkehr et al. 2010: 44). These options are not analyzed in detail due to reasons given earlier and that the focus in this chapter is on a comparison between on-site management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149) and off-site management accounting (Horak 1995: 128; Pössl 1991: 60).

On the whole, it can be concluded that the majority of the scientists follow the idea that tables (Wetterer 2005: 58; Wiederkehr et al. 2010: 44) that can be used to assess options (Wetterer 2005: 58; Wiederkehr et al. 2010: 44) can be applied in order to come to a decision in view of the creation of an on-site management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149) or off-site management accounting (Horak 1995: 128; Pössl 1991: 60) which involves the outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) of management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.).

This can be justified by the fact that with the aid of instruments (Wetterer 2005: 58; Wiederkehr et al. 2010: 44), various scenarios in view of the form of management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149) can be created and then discussed in the management circle.

As mentioned above, the form of on-site management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149) will be shown first with the aid of the following chapter for the sake of comparability.

3.2.1 On-site management accounting

On-site management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149) can be characterized by that own permanent employees perform management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) on the employer's premises (Mistlberger 2004: 297 et seq.). Thus, it is about a dependent employment relationship that is based on the employment contract. In this respect, management accounting functions (Mehlan 2007: 11; Tschandl 2012:

16; Erichsen 2010: 68 et seq.) can be performed by employees who have been hired for this purpose or even by the managing director or owner himself (Klett et al. 2010: 6 et seq.; Tegel 2015: 132; Deloitte 2008: 7 et seq.), which practice often shows. One of the main tasks of on-site management accountants (Mistlberger 2004: 297 et seq.) is to analyze data provided by the accounting department (Mistlberger 2004: 297 et seq.). In this respect, there is also the option that data is prepared by other enterprise departments (Mistlberger 2004: 297 et seq.) or even outsiders such as tax advisors (Ossadnik et al. 2010: 44). Both require the on-site management accountant to collaborate with different internal departments or outsiders such as tax advisors (Ossadnik et al. 2010: 44). In the following, it will be discussed which enterprises should create an on-site management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149), as it is closely related to the dissertation topic.

On-site management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149) can make sense for certain enterprises. Within the scope of such considerations, it makes sense to question further which management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) are suitable to be performed with help of own permanent employees and which management accounting functions are more suitable for off-site management accounting consultants (Accenture 2018). Factors such as enterprise size (Klett et al. 2010: 6 et seq.) can influence such considerations and thus the decision for or against the creation of on-site management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149).

According to analyses, there is little management accounting (Klett et al. 2010: 6 et seq.) in small enterprises, often due to the size criterion mentioned above (Klett et al. 2010: 6 et seq.). This, in turn, requires the owner himself (Klett et al. 2010: 6 et seq.; Tegel 2015: 132; Deloitte 2008: 7 et seq.) to perform the management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.). The establishment of an on-site management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149) seems to be less profitable (Klett et al. 2010: 6) in small enterprises due to the scope of management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) that can be performed in small enterprises (Klett et al. 2010: 6). Besides, on-site management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149) can be characterized by the fact that almost all tasks and issues are performed within an enterprise (Klett et al. 2010:

6; Gottfreund 2015: 16). In addition, on-site management accountants can be characterized by temporal and physical proximity to the company and thus to the managers (Klett et al. 2010: 6; Kummert 2004: 162).

According to Kenning (2003: 149), on-site management accounting appears to be advantageous in cases of business activities that are highly sensitive (Kenning 2003: 149). Moreover, on-site management accounting or rather on-site management accountants show deficiencies when it comes to using certain systems (Kummert 2004: 162), which can contribute to improved results (Kummert 2004: 162). One solution, however, could be to transfer management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) to another internal employee if that employee has the appropriate skills (Kenning 2003: 149).

It can be concluded that there are divergent statements on the subject of on-site management accounting (Klett et al. 2010: 6; Gottfreund 2015: 16). For instance, lack of know-how (Kummert 2004: 162) is considered as a negative success factor, while personal closeness can be viewed both negatively and positively (Klett et al. 2010: 6; Kummert 2004: 162). In this respect, know-how plays a significant role in enterprises like SMEs when it comes to participating in challenges such as digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.). Due to this, concerns can be expressed about whether the proximity to the company can contribute to motivating internal management accountants to increase know-how. Motivated employees (Piezonka 2013: 13; Wankel 2008: 407 et seq.) are one of the most important resources (Piezonka 2013: 13; Wankel 2008: 407 et seq.) of an enterprise. However, motivation can shrink due to being too close to the company and enterprise managers (Klett et al. 2010: 6; Kummert 2004: 162) which in turn can result in low competence progress. There is a solution to this which is offered by out-of-offices. It is about shared offices. Shared offices are a modern workplace design, which are used, for instance, by IT entrepreneurs or consultants. This can also help to purchase lacking competencies off-site (Gleich et al. 2016: 73 et seq.; Kaltenbacher 2011: 78; Piezonka 2013: 13). The on-site management accountant or the person who performs management accounting tasks (Mistlberger 2004: 297 et seq.; Kenning 2003: 149) can thus share an office with off-site consultants (Accenture 2018) in order to acquire certain skills of the consultants or to be advised without being disturbed (Horak 1995: 128). Fixed days per month can be agreed upon for this.

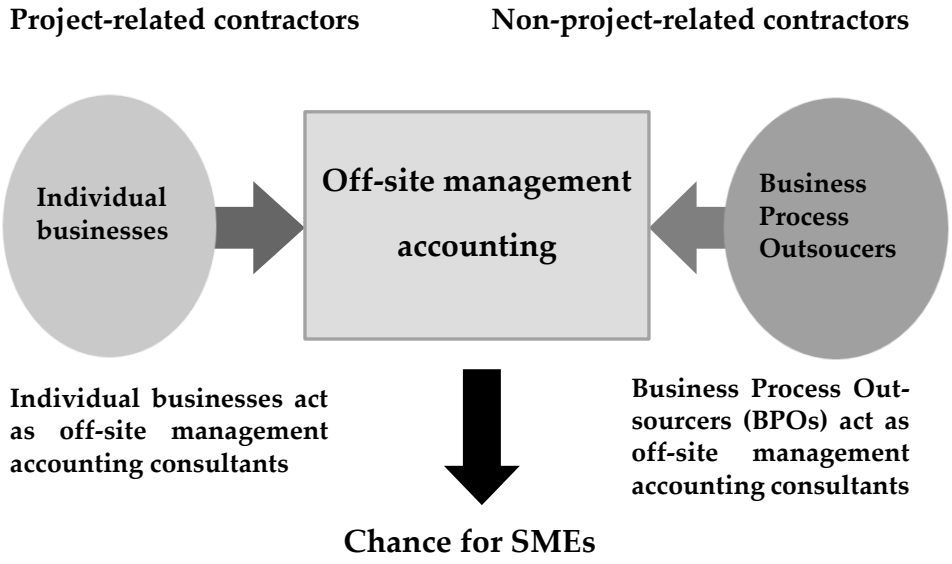
In this respect, the option of an off-site management accounting (Horak 1995: 128; Pössl 1991: 60) seems to be reasonable. Thus, with the aid of the following chapter, the option of an off-site management accounting (Horak 1995: 128; Pössl 1991: 60) as a solution for SMEs will be shown in detail.

3.2.2 Off-site management accounting

Off-site management accounting (Horak 1995: 128; Pössl 1991: 60) can be characterized by that off-site consultants (Accenture 2018) who are located outside the enterprise offer know-how regarding management accounting (Horak 1995: 128). Moreover, it can be described as a collaboration that is based on consultancy or service agreements (Horak 1995: 128). It is therefore an independent employment relationship. There are often situations in which enterprises need the support provided by off-site management accounting consultants due to the lack of in-house competencies and skills (Deloitte 2008: 7 et seq.). These can be project-related topics or certain business decisions. Off-site management accounting (Horak 1995: 128; Pössl 1991: 60) can help here, as support can be purchased with the aid of off-site management accounting consultants.

It should be noted that off-site management accounting (Horak 1995: 128; Pössl 1991: 60) can be implemented in different ways. There is the option to refer to project-related contractors such as individual businesses (NordConsulting 2021; SBU Götz Concept 2021; Karin Menne - Interim Management 2021; Zahlenklar accounting & Consulting 2020; Modul-Consult 2021) who act as off-site management accounting consultants. Another option is offered by non-project-related contractors such as Business Process Outsourcers (BPOs) (Accenture 2018) who provide their services also in the field of management accounting, as it is the case with Accenture (2018). This also includes the activities of an off-site management accounting consultant (Accenture 2018). This possible design option of an off-site management accounting can be seen with the help of the following own created illustration.

Figure 6: Design option of off-site management accounting.



Source: Own depiction

Although both options offer the basis to create an off-site management accounting (Horak 1995: 128; Pössl 1991: 60), they differ in view of their range of service (Accenture 2018) and extent of customer care which is based on customer requirements. In this respect, the option of Business Process Outsourcers (BPOs) (Accenture 2018) is considered separately with help of Chapter 5. The reason for

this is that it is closely related to the topic of outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11), which is dealt with help of Chapter 5.

In the following, the option of project-related contractors, such as individual businesses for off-site management accounting (Horak 1995: 128; Pössl 1991: 60), is examined in more detail.

In most cases, off-site management accounting (Horak 1995: 128; Pössl 1991: 60) is associated with high expectations on the part of enterprise management (Horak 1995: 128; Pössl 1991: 60). One of these expectations is that off-site management accounting consultants should be available to the management at all times and be able to provide advice and support (Horak 1995: 128 et seq.).

According to Horak (1995: 129), off-site management accounting (Horak 1995: 128; Pössl 1991: 60) should be used in particular for project-specific issues since off-site management accounting consultants can assess the state of affairs and thus position an enterprise or change its bearing (Horak 1995: 129).

Thus, it seems reasonable to analyze the requirements that are placed on off-site management accounting consultants regarding both professional and personal competencies.

In this respect, a requirements profile should be drawn up, which can help select the suitable individual business for off-site management accounting (Horak 1995: 128; Pössl 1991: 60) and to draft the consultancy agreement (Pössl 1991: 59). Depending on requirements, it can be useful to mandate, if necessary, additional individual businesses for off-site management accounting (Horak 1995: 128; Pössl 1991: 60), which would be reasonable, for instance, in the case of limited knowledge of legal issues (Pössl 1991: 60).

There is the possibility of pointcasting individual business for off-site management accounting (Horak 1995: 128; Pössl 1991: 60), which would make sense in cases of unique topics such as for forecasts or break-even analyses, whereas a permanent mandate can mean sustainable success for an enterprise (Pössl 1991: 68).

The type of contract can, for instance, vary from one consulting day per quarter to one to four days per month (Pössl 1991: 68). When considering the creation of off-site management accounting (Horak 1995: 128; Pössl 1991: 60), it is useful to consider aspects such as antipathy and aversion (Weber et al. 1993: 9) of

any possibly existing on-site management accountants or management members (Weber et al. 1993: 9). Possible rejections of implementing an off-site management accounting (Horak 1995: 128; Pössl 1991: 60) could take the form of power struggles, fear of data access, interference, and unbiased reporting by members of the accounting department (Weber et al. 1993: 9). In this respect, the relevance of off-site management accounting (Horak 1995: 128; Pössl 1991: 60) should be carefully analyzed.

Individual business for off-site management accounting (Horak 1995: 128; Pössl 1991: 60) should be accepted as partners who accompany enterprise management in achieving goals. Consequently, off-site management accounting (Horak 1995: 128; Pössl 1991: 60) is of far-reaching importance for enterprises and especially for SMEs. Oftentimes, it can be realized that SMEs have financial weaknesses (Kolb 2006: 12; Szyja 2015: 21), which in turn hinder the permanent employment of a qualified management accountant (Urigshardt et al. 2008: 1 et seq.). Alternatively, enterprises can mandate individual businesses for off-site management accounting (Horak 1995: 128; Pössl 1991: 60) whose costs are lower in comparison to those of an on-site management accountant. According to Urigshardt (2008: 1 et seq.), however, such a solution can – to a certain extent – be limited by factors such as trust and transparency (Urigshardt et al. 2008: 1 et seq.).

In any case, individual business for off-site management accounting (Horak 1995: 128; Pössl 1991: 60) should be mandated in cases of project work (Urigshardt et al. 2008: 1 et seq.). Moreover, individual businesses for off-site management accounting (Horak 1995: 128; Pössl 1991: 60) can be used for the implementation of tools that evaluate enterprise success (Urigshardt et al. 2008: 1 et seq.) and that moreover can contribute to decisions that advance enterprise success (Urigshardt et al. 2008: 1 et seq.). At this point, it is useful to analyze the causes of such demands and expectations.

A brief review will help to understand such expectations. Along with the historical progress of management accounting, it can be realized that enterprise management today must adapt to global changes, internationalization, and challenges, such as the digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.), which lead to time pressure and quality demand and altered target settings of enterprise management due to the expectations of customers and other stakeholders (Becker et al. 2014: 439).

Furthermore, such expectations require adjustments, and this raises the question of whether it would be useful to refer to individual businesses for off-site for management accounting (Becker et al. 2006: 439), which can help make necessary adjustments. However, according to Becker et al. (2006: 439), practice shows something else; enterprises are reluctant to mandate individual business for off-site management accounting (Horak 1995: 128; Pössl 1991: 60), partly due to budget constraints, trust, and lack of independence (Becker et al. 2006: 439).

Undoubtedly, it must first be weighted whether an on-site management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149) or an off-site management accounting (Horak 1995: 128; Pössl 1991: 60) should be implemented, but this depends on factors such as enterprise size, strategy, and budget.

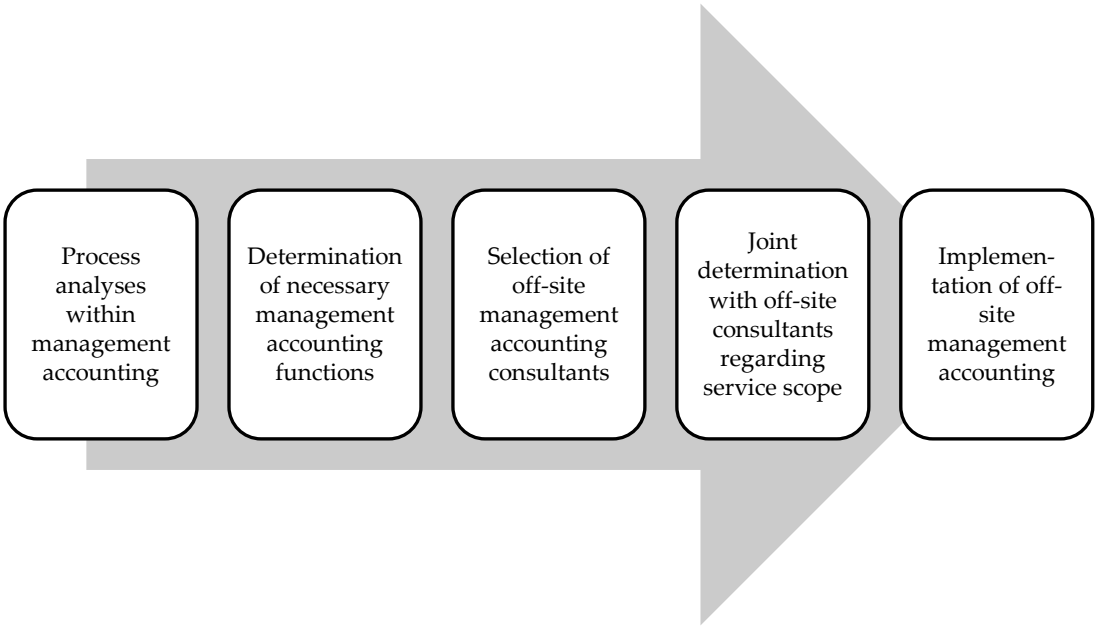
Independently of such considerations, several individual businesses for off-site management accounting (Horak 1995: 128; Pössl 1991: 60) set up their business. There are even individual businesses for off-site management accounting (Horak 1995: 128; Pössl 1991: 60) specifically for SMEs and thus limit their scope of advice to SMEs. SMEs should refer to individual businesses for off-site management accounting (Horak 1995: 128; Pössl 1991: 60) that are specialized in SMEs and familiar with cross-functional projects, as the expectations of SME management can be met in the overall view. Only in this way, will SMEs have the chance to solve their problems gradually and thus meet expectations. In this view, it would be useful to analyze whether SMEs are ready to accept the support offered by individual businesses for off-site management accounting (Horak 1995: 128; Pössl 1991: 60).

There are studies, such as those by Carey et al., who have analyzed this issue (Carey et al. 2016: 307). The results show the advantages of off-site management accounting (Carey et al. 2016: 307), which can be attributed to the relationship which is based on trust between individual businesses for off-site management accounting and enterprise management (Carey et al. 2016: 307). Moreover, the study shows that SMEs, in general, are willing to use the services of individual businesses for off-site management accounting when information asymmetries are minimized (Carey et al. 2016: 307) and the individual businesses for off-site management accounting are skilled enough to advise the enterprise management (Carey et al. 2016: 307). This implies the assumption that individual businesses for off-site management accounting can only be successful if they provide well-

prepared information to enterprise management (Carey et al. 2016: 307). It is obvious that SMEs are dependent on off-site management accounting consultants (Accenture 2018), as practice shows that they lack skilled personnel, know-how, and application-based resources.

The following figure provides an option (Jenny 2019: 473) regarding the steps to be taken to implement off-site management accounting (Horak 1995: 128; Pössl 1991: 60) in SMEs. The figure is based on the approach of project implementation (Jenny 2019: 473), as the creation of off-site management accounting (Horak 1995: 128; Pössl 1991: 60) can be compared to that of project implementation (Jenny 2019: 473).

Figure 7: Progressive creation of off-site management accounting.



Source: Own depiction according to Jenny (2019: 473).

The following conclusion can be drawn: The majority of researchers consider it useful to implement an off-site management accounting (Horak 1995: 128; Pössl 1991: 60) and, in this conjunction, to work with off-site management accounting consultants who are experts in management accounting due to various reasons (Urigshardt et al. 2008: 1 et seq.) that can contribute to enterprise success. The reasons given, such as improved decision-making (Urigshardt et al. 2008: 1 et seq.), can be considered as success factors. Critical success factors such as lack of trust and dependency (Becker et al. 2006: 439) on the part of employees and enterprise managers can occur when it comes to opting for off-site management accounting (Horak 1995: 128; Pössl 1991: 60).

At this point, it makes sense to mention that people are often prejudiced when changes are planned. However, off-site management accounting (Horak 1995: 128; Pössl 1991: 60) cannot lead to prejudices or even fears. On the contrary, it can lead to the building of trust between off-site management accounting consultants (Zahlenklar 2020) when they are used to working with customers on a trusting basis. Thus, the organization and employees can benefit from it.

On this basis, it makes sense to analyze the scope regarding setting up an off-site management accounting (Horak 1995: 128; Pössl 1991: 60). This topic will be dealt within the following chapter.

3.2.3 Scope of off-site management accounting in SMEs

In the following, the design options for off-site management accounting (Horak 1995: 128; Pössl 1991: 60) will be analyzed. It is aimed to show what alternatives exist that can contribute to creating an off-site management accounting (Horak 1995: 128; Pössl 1991: 60) for SMEs. Moreover, it is about showing solutions for SMEs regarding the deficiency of management accounting (Klett et al. 2010: 6; Euler Hermes 2006). There are various solutions to this problem, which will be highlighted hereinafter.

The first solution offers off-site management accounting (Horak 1995: 128; Pössl 1991: 60) in its entirety, in that the off-site management accounting consultant takes over almost all management accounting functions (Weber et al. 2001: 25 et seq.).

Thus, enterprise management would be inclined to transfer all functions of management accounting (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) to the off-site management accounting consultant (Weber et al. 2001: 25 et seq.). However, this would require a strong relationship of trust on the part of the SME management (Weber et al. 2001: 25 et seq.).

The second solution is different. In this case, enterprise management would comply with the rules and objectives of the enterprise but would show deficits (Gleich et al. 2016: 73 et seq.; Kaltenbacher 2011: 78; Piezonka 2013: 13), for instance, in business economics or digital transformation (Weber et al. 2001: 25 et seq.). Thus, off-site management accounting consultants could be helpful in such cases by improving the managers' know-how of management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.).

The collaboration between management and off-site management accounting consultant (Zahlenklar 2020) should in both cases be based on trust as it can be assumed that off-site management accounting consultants, even if unintentionally, try to influence management by distance. Thus, enterprise management should always feel secure and strengthened to implement strategies with the aid of off-site management accounting consultants (Zahlenklar 2020).

It appears to be useful that SMEs should first get a picture of the knowhow of the management accounting performing person and afterward decide which form of off-site management accounting (Horak 1995: 128; Pössl 1991: 60) they should opt for. A qualification profile (Thomas 2014: 80 et seq.) can be used for this. Creating suchlike profiles in collaboration with off-site management accounting consultants (Zahlenklar 2020) can be helpful.

Moreover, to make a final decision regarding the scope and hence the creation of an off-site management accounting (Horak 1995: 128; Pössl 1991: 60), SMEs should determine the reasons. Thus, in the following chapter, the reasons for off-site management accounting (Horak 1995: 128; Pössl 1991: 60) will be highlighted.

3.2.4 Reasons for off-site management accounting in SMEs

Analyzing reasons for mandating off-site management accounting consultants can help SMEs to decide for or against off-site management accounting (Horak 1995: 128; Pössl 1991: 60).

There are other factors that should be considered when using off-site management accounting consultants (Horak 1995: 128; Accenture 2018). For instance, analyses (Bennet et al. 2000: 814) carried out with small enterprises show local closeness between enterprises advised and off-site management accounting consultants (Bennet et al. 2000: 814). This makes it easier for off-site management accounting consultants to obtain information, and management can communicate and exchange information about enterprise issues immediately (Bennett et al. 2000: 814).

There are studies, such as that by Bennett et al., which show that SMEs use off-site consultants to be economically competitive (Bennett et al. 2000: 797). Furthermore, Bennett et al. assume that economic competitiveness can be increased when enterprise management is well-informed by off-site consultants (Bennett et al. 2000: 797). This aspect was, as already mentioned, considered by Carey et al. (2016: 307); however, its importance cannot be emphasized strongly enough. There are undoubtedly other reasons for implementing off-site management accounting (Horak 1995: 128; Pössl 1991: 60) in SMEs as well.

In many cases, off-site management accounting (Horak 1995: 128; Pössl 1991: 60) seems to be the best option for SMEs if they want to be competitive (Sierke et al. 2017: 23 et seq.). The current situation in SMEs shows that enterprise management operates with past rather than future-oriented data (Sierke et al. 2017: 23 et seq.). However, it is of great importance that SMEs work with future-oriented data (Sierke et al. 2017: 23 et seq.). This can be realized with help of an off-site management accounting (Horak 1995: 128; Pössl 1991: 60) that offers the opportunity to work with off-site management accounting consultants who can provide goal-driven data (Sierke et al. 2017: 23 et seq.).

Furthermore, this will be indispensable, as globalization, internationalization, and competitive pressure will require this strategy (Sierke et al. 2017: 23 et seq.).

At this point, it would be helpful if there were analyses showing the number of SMEs using off-site management accounting (Horak 1995: 128; Pössl 1991: 60) and, in connection with this, the status quo of actual management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149). The present dissertation project pursues this question with an empirical study, which is highlighted in Chapter 9.

However, to be able to draw comparisons with the planned empirical study, analyses of a study (Sierke et al. 2017: 23 et seq.) already published in 2015 by Sierke et al. (2017: 23 et seq.) will serve as an example beforehand. Due to its scope (Sierke et al. 2017: 23 et seq.), only basic findings that contribute in any way to gaining an insight into the management of SMEs (Menzel et al. 2011: 93 et seq.) and their strategies in the field of management accounting (Sierke et al. 2017: 23 et seq.) are shown. In addition, the study (Sierke et al. 2017: 23 et seq.) focuses more on the instruments of management accounting (Sierke et al. 2017: 23 et seq.) and thus considers only one specific aspect.

Findings of the study of Sierke et al.: The analysis of this study shows that almost 98 percent of the SMEs evaluated work with historical data by using balance-sheet figures (Sierke et al. 2017: 23 et seq.). This strategy is justified by SME managers on the grounds that the markets are unstable, and for this reason, short-term planning seems to be more appropriate than long-term planning (Sierke et al. 2017: 25). The study also points out that, in view of short-term strategies such as cost accounting, SME management uses management accounting instruments to almost 90 percent, followed by liquidity planning and breakeven analyses to almost 80 percent, to name but a few of the study results (Sierke et al. 2017: 25). Nevertheless, market conditions – to name just one example – require SMEs to find a solution in view of management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149). This opens the possibility of off-site management accounting (Horak 1995: 128; Pössl 1991: 60). Off-site management accounting consultants are familiar with the creation of key figures and indicator systems (Sierke et al. 2017: 26). Moreover, off-site management accounting consultants are used as advisors and can support the management in various issues (Sierke et al. 2017: 26). According to Wolf et al., this would make sense in cases where leadership and management need to be coached (Wolf et al. 2017: 2 et seq.) concerning management accounting functions (Wolf et al. 2017: 2 et seq.). However, off-site management accounting consultants offer

many more competencies (BDU 2006), such as the capability to harmonize processes (BDU 2006).

In addition, off-site management accounting (Horak 1995: 128; Pössl 1991: 60) offers advantages, as off-site management accounting consultants can help disclose unprecedented enterprise purposes and communicate these to employees so that they can gain their trust (Hummel et al. 2009: 105). This can, for instance, be achieved by visualizing the current enterprise status using Key Performance Indicators (KPIs). For this purpose, dashboards should be used which can be tailored for specific purposes or highlight the metrics that focus on a particular aspect.

As soon as enterprise management has placed its trust in the off-site management accounting consultant, further business activities can be successfully implemented.

It is of vital importance that the off-site management accounting consultant secures the trust of the management and keeps his distance, otherwise he would not gain credibility (Lühr 2001: 98).

On this basis, the question arises of who should act as an off-site management accounting consultant for SMEs. Nowadays, there are some SMEs that use the services of their tax or banking advisor (Ossadnik et al. 2010: 44) when seeking advice on specific business issues. Their advisory competence does not seem sufficient as they show deficiencies in corporate management (Schauf 2009: 15; Menzel et al. 2011: 93 et seq.; Behrends et al. 2005: 17; Immerschitt et al. 2014: 29) and management accounting (Ossadnik et al. 2010: 44).

SMEs still believe that management accounting can be associated with monitoring and supervision (Ossadnik et al. 2010: 44 et seq.), which restricts the opportunity to create an off-site management accounting (Horak 1995: 128; Pössl 1991: 60). However, this way of thinking is archaic, which is due to that, at the beginning of this professional field, it was believed that management accounting could be associated with control (Ossadnik et al. 2010: 44 et seq.).

Hence, there is a wrong interpretation of the term management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149), which continues until today. The duty of management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149)

is anything but a control function. As mentioned before, it is a support function for the management (Troßmann 2018: 4).

Enterprises, especially SMEs, are facing difficult economic times, and this requires measures that can help to safeguard jobs and the stability of an enterprise. With the aid of off-site management accounting (Horak 1995: 128; Pössl 1991: 60), undesirable progress can be identified and adjusted at an early stage. Even if the management of SMEs is convinced that management accounting is a useful function, it is a fact that in exceptional cases, SMEs employ management accountants (Ossadnik et al. 2010: 44 et seq.).

The practice shows that the managing director or owner himself (Klett et al. 2010: 6 et seq.; Tegel 2015: 132; Deloitte 2008: 7 et seq.) or an employee from the finance department is occupied with management accounting functions (Wolf et al. 2017: 2 et seq.) and is often supported by the bank director or tax advisor (Ossadnik et al. 2010: 44) in interpreting enterprise data (Ossadnik et al. 2010: 44). However, given the challenges posed, this does not seem sufficient.

In summary, it can be realized that there are different reasons to implement off-site management accounting (Horak 1995: 128; Pössl 1991: 60) such as low advisory competence (Ossadnik 2010: 44) in view of business administration on the part of the tax advisor (Ossadnik 2010: 44) and the insufficient use of future-oriented enterprise data on the part of enterprise management (Sierke et al. 2017: 23 et seq.). It can be determined that the reasons given by scientists for off-site management accounting (Sierke et al. 2017: 23 et seq.; Ossadnik 2010: 44) are mainly factual reasons. Only general statements are made on the competence level.

The reasons for referring to off-site management accounting consultants are, however, much deeper, and often the result of the *personal cognition* and *responsiveness* (Reis et al. 2004: 201 et seq.; Gable et al. 2006: 211 et seq.) of the SME manager, which is determined by perception processes and conviction influenced by personal and environmental experiences. It is about the lack of *personal quality* that can contribute to refer to off-site management accounting consultants who are familiar with topics related to responsiveness (Reis et al. 2004: 201 et seq.; Gable et al. 2006: 211 et seq.).

Moreover, it seems that SME managers are not ready to act on new challenges and opportunities and, as a consequence, do not seek to learn and experiment. As

a result, it is intended to research the importance of the topic responsiveness (Reis et al. 2004: 201 et seq.; Gable et al. 2006: 211 et seq.) on the part of SMEs with the aid of the present study.

Within the scope of the creation of off-site management accounting (Horak 1995: 128; Pössl 1991: 60), it makes sense to consider which kind of off-site management accounting consultant is suitable for its own enterprise. This will thus be analyzed with the aid of the following chapter.

3.2.5 Choice of individual businesses for off-site management accounting

In the following, the option of individual businesses for off-site management accounting (Horak 1995: 128; Pössl 1991: 60) will be highlighted.

There are various alternatives for finding suitable individual businesses to create an off-site management accounting (Horak 1995: 128; Pössl 1991: 60), and one of the alternatives is offered by the *German Federal Association of Management Consultants (BDU)*. Thus, interested enterprises can implement an off-site management accounting (Horak 1995: 128; Pössl 1991: 60) with the aid of the *German Federal Association of Management Consultants (BDU)*.

This association offers a register with a subject index that represents several individual businesses for off-site management accounting (Horak 1995: 128; Pössl 1991: 60) so that enterprises can select and contact up to five individual businesses for off-site management accounting that may be suitable for their off-site management accounting purposes according to the guidelines of BDU (Hummel et al. 2009: 305). At this point, it makes sense to point out that this step or procedure assumes that the company has analyzed in advance which management accounting functions (Wolf et al. 2017: 2 et seq.) it needs support.

Subsequently, the contacted individual businesses for off-site management accounting can each submit proposals that include the costs regarding the creation of an off-site management accounting (Hummel et al. 2009: 305).

Finally, interested enterprises can conclude a contract that meets their wishes and requirements (Hummel et al. 2009: 305). Certainly, it lies with the enterprise to decide to mandate an individual business for off-site management accounting (Horak 1995: 128; Pössl 1991: 60); however, in view of such consideration, it should be considered that the salary of a highly competent on-site management accountant

can be compared to management fees (Hummel et al. 2009: 305). Taking all these factors into account, it seems to be advantageous to opt for off-site management accounting (Horak 1995: 128; Pössl 1991: 60), which appears to be particularly useful for SMEs, as they can save costs and benefit from the expertise of the off-site management accounting consultant (Hummel et al. 2009: 306).

Furthermore, support can be provided by individual businesses for off-site management accounting as they are specialized in corporate management (Immerschitt et al. 2014: 29) and are used in the creation of new systems, thus enabling enterprise issues to be solved in the shortest time (Diehm 2014: 185). Moreover, entrepreneurial projects can be implemented more quickly due to their ability to establish a relationship with management (Kaland 2014: 316).

On this basis, such considerations argue for an off-site management accounting (Horak 1995: 128; Pössl 1991: 60) that can be realized with the aid of individual businesses for off-site management accounting. Medium-sized enterprises, in particular, should consider off-site management accounting (Horak 1995: 128; Pössl 1991: 60) to be more advantageous if the desired performance has to be realized at lower costs and with high quality (Pietsch 2003: 178).

Moreover, Pietsch (2003: 178) hides any risks by emphasizing the high quality regarding the customer-oriented service of individual businesses for off-site management accounting (Horak 1995: 128; Pössl 1991: 60).

Regardless of their choice, it cannot be stressed enough that individual businesses for off-site management accounting have special skills (Kummert 2004: 162).

Besides, off-site management accounting consultants can act independently and advise management, which is generally accepted by management rather than receiving advice from on-site management accountants (Kummert 2004: 162).

Advice from off-site management accounting consultants is generally not considered to be interference; when negative emotions occur, they will not affect internal relationships (Kummert 2004: 162).

In addition, the creation of off-site management accounting (Horak 1995: 128; Pössl 1991: 60) seems to be useful in cases of lack of internal resources, and what should also be taken into account is that off-site management accounting consultants often specialize in topics such as methodical approaches (Urigshardt et

al. 2008: 1 et al.), which leads to the exploitation of diversification effects for individual businesses for off-site management accounting (Urigshardt et al. 2008: 1 et seq.). An off-site management accounting (Horak 1995: 128; Pössl 1991: 60) can be regarded as an option to on-site management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149) or even as an integration in existing management accounting processes, provided it delivers a positive cost-benefit ratio (Urigshardt et al. 2008: 1 et seq.).

The list below shows various individual businesses for off-site management accounting (Horak 1995: 128; Pössl 1991: 60). This is a small excerpt that should help to get an overview of their know-how.

Moreover, their fee ranges between 5,000 and 30,000 euros per year (as of January 2021), depending on the scope of requirements.

Table 5: Selection of individual businesses for off-site management accounting.

Individual businesses	Tasks	Frequency	Software Systems
NordConsulting	- Operational management accounting - Creation of indicator systems - Analysis of operating results - Support with funding applications	Continuous advice	texcontrol
SBU Götz Concept	- Enterprise analyses - Creation of off-site management accounting - Integration of strategic goals - Creation of cost-earning accounts	According to the needs of the customer	Customized solutions

Individual businesses	Tasks	Frequency	Software Systems
Karin Menne - Interim Management	- Creation of management accounting - Process analyzes - Liquidity planning - Creation of ERP systems - Business consulting	According to the needs of the customer	ERP Software (Enterprise Resource Planning Software)
Zahlenklar Management accounting & Consulting	- Creation of management accounting systems - Business planning - Progress of key figures - Target-performance comparison - Progress of measures	Continuous advice	ERP Software (Enterprise Resource Planning Software)
Modul-Consult	- Target performance analyses - Creation of key figures - Reporting - Liquidity planning - Business consulting - Creation of off-site management accounting	According to the needs of the customer	ERP (Enterprise Resource Planning Software)

Source: Own depiction according to NordConsulting (2021); SBU Götz Concept (2021); Karin Menne – Interim Management (2021); Zahlenklar Management accounting & Consulting (2020); Modul-Consult (2021).

It can be concluded that gaps within management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) can be filled with the aid of individual businesses offering their know-how as off-site management accounting consultants (Table 5).

However, there may be concerns in this respect: The capacities regarding the time of the individual businesses can be limited. Individual businesses for off-site management accounting (Horak 1995: 128; Pössl 1991: 60) are often involved in

various projects and, as a consequence, cannot process the projects at the same time. This could lead to disappointment on the part of the SME management and would endanger the emotional level of collaboration. Moreover, topics such as digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) and process optimization do not seem to have arrived yet at these individual businesses for off-site management accounting (Horak 1995: 128; Pössl 1991: 60). For this reason, it makes sense to consider additional options in view of the creation of an off-site management accounting (Horak 1995: 128; Pössl 1991: 60). At this point, reference is made to Chapter 3.2.2., where the option was offered to refer to service partners such as Business Process Outsourcers (BPOs) (Accenture 2018) who provide their services, amongst others, in the field of management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.; Accenture 2018).

Within the scope of the creation of an off-site management accounting (Horak 1995: 128; Pössl 1991: 60), it moreover makes sense to verify the salary expectations (Robert Half 2019) of on-site management accountants to be able to draw comparisons to the costs that can occur when it comes to mandating individual businesses for off-site management accounting (Horak 1995: 128; Pössl 1991: 60). Furthermore, it can be assumed that additional factors such as the netting structure of the enterprise manager play an important role when it comes to opting for or against an off-site management accounting (Horak 1995: 128; Pössl 1991: 60). At this point, it thus makes sense to highlight the advantages and disadvantages of off-site management accounting (Horak 1995: 128; Pössl 1991: 60).

3.2.6 Advantages and disadvantages of off-site management accounting for SMEs

In connection with the topic of project-related contractors such as individual businesses for off-site management accounting (Horak 1995: 128; Pössl 1991: 60), it makes sense to consider the advantages and disadvantages. This can help SMEs to position themselves in view of off-site management accounting (Horak 1995: 128; Pössl 1991: 60). Thus, in the following, the advantages will be highlighted first.

An off-site management accounting (Horak 1995: 128; Pössl 1991: 60) is less expensive compared to an on-site management accounting (Robert Half 2019). This

assumption is based on a study (Robert Half 2019) conducted by the recruitment consulting firm Robert Half (2019).

Based on the study by Robert Half (2019), the salary of a management accountant whose qualifications and experience are at a middle level should be calculated at 80,000 euros per year (Robert Half 2019). It should be noted that employers' social security costs are not included in this calculation. Thus, about 20% of the social security contributions must be added to the annual salary of 80,000 euros. The total costs of employing an on-site management accountant would therefore be 96,000 euros.

In comparison, mandating individual businesses (Zahlenklar 2020) for off-site management accounting (Horak 1995: 128; Pössl 1991: 60) involves lower costs. The tasks of individual businesses (NordConsulting 2021; SBU Götz Concept 2021; Karin Menne - Interim Management 2021; Zahlenklar accounting & Consulting 2020; Modul-Consult 2021) for off-site management accounting can include a comprehensive analysis of the enterprise situation with monthly follow-up reviews, key metrics, and reporting, which can be complemented by topics such as target definition, business planning, discussion of results, use of indicator systems, to name but a few of the responsibilities that can be purchased by enterprises such as SMEs. This is only one possible solution.

Furthermore, off-site management accounting consultants (Zahlenklar 2020) are used to working with sensitive data. All these factors can contribute to a relationship of trust between the enterprise management and the off-site management accounting consultant (Accenture 2018) and to an improvement in management decisions.

The management will then be inclined to make good decisions and ensure the survival of an enterprise. However, off-site management accounting (Horak 1995: 128; Pössl 1991: 60) should not be considered a panacea or magic bullet. It is even dangerous. Consequently, the advantages mentioned above should also be compared to the disadvantages.

Thus, one of the dangerous aspects is the netting structure of the management. Practice shows that the manager refers to his family members, such as his son or wife, for advice (Broich 2015: 18 et seq.). Furthermore, he refers to outsiders such as the bank director or tax advisor (Ossadnik et al. 2010: 44) for

advice. Thus, his family and outsiders feel obliged to give advice when the manager asks for it.

However, as soon as off-site management accounting (Horak 1995: 128; Pössl 1991: 60) is implemented, the manager's netting structure will change. The manager will then ask the off-site management accounting consultant for advice, and he or she may receive the advice of the off-site management accounting consultant that does not please him or her. As a consequence, this new situation requires the acceptance and trust of the manager. Furthermore, family members may feel excluded from business affairs, and this situation can cause an emotional issue for both the manager and the family members. Moreover, current consultants such as the bank director and tax advisor (Ossadnik et al. 2010: 44) may feel unsure whom to ask when decisions need to be made. They could refer to the off-site management accounting consultant directly, and this could jeopardize the position of power of the SME manager.

As a result, the manager's previous netting structure may be at risk. Consequently, the management of SMEs intending to implement off-site management accounting (Horak 1995: 128; Pössl 1991: 60) should be aware of these difficulties and involve outsiders and family members in their projects in good time. Moreover, it makes sense to examine relationships (Ackere 1993: 83 et seq.).

In this respect, the principal agency theory is a suitable option, as it investigates relationships in the business between principals and agents (Ackere 1993: 83 et seq.). In this conjunction, the relationship is characterized by an information advantage on the part of the agent (Ackere 1993: 83 et seq.). In this respect, it moreover makes sense to analyze further theories (Dibbern et al. 1999: 6) such as the resource-based theory, transaction-cost theory, and power theory (Dibbern et al. 1999: 6). These theories (Dibbern et al. 1999: 6) will thus be dealt in Chapter 7, as they are related to the own study and hence will be considered prior to the research design (Stein 2014: 135 et seq.).

Enterprises like SMEs must be able to deal with far more challenges than the issues mentioned above. It is about the topic of digital transformation (Kessler et al. 2019: 87 et seq.), which is a much-discussed topic in economics, science, and business and can thus be considered a global megatrend. On this basis, it makes sense to consider the topic of digital transformation (Kessler et al. 2019: 87 et seq.) below.

4 DIGITAL TRANSFORMATION AS PROCESS OF ADVANCING DIGITAL MATURITY

In the following, the topic of digital transformation (Kessler et al. 2019: 87 et seq.) will be considered as a process that advances digital maturity (Kessler et al. 2019: 87 et seq.). In this respect, the digital maturity within management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) can be assessed with help of digital maturity models (Schwalbach 2018: 122 et seq.; Bühler et al. 2018: 197). Enterprises such as SMEs can evaluate the maturity level of their entire enterprise or of their operational processes (Kessler et al. 2019: 87 et seq.). Based on the results, they can initiate measures that will improve their readiness for digital transformation (Kessler et al. 2019: 87 et seq.).

First, the terminology of digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) will be defined, which is followed by an explanation that digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) is an ongoing process of digital maturity. Subsequently, it is highlighted that digital transformation (Kessler et al. 2019: 87 et seq.) can be used as a driving force (BMWi 2017: 4 et seq.; Saam et al. 2016: 28 et seq.; McKinsey 2017: 2 et seq.) in enterprises, followed by studies that examine the degree of digital transformation in SMEs (BMWi 2017: 4 et seq.; Saam et al. 2016: 28 et seq.; McKinsey 2017: 2 et seq.). The concluding consideration of this chapter is complemented by additional studies that analyze the digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) status within the management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) of SMEs.

4.1 DEFINITION OF THE TERM DIGITAL TRANSFORMATION

The term digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) is currently interpreted in different ways (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.), which leads to different explanations (Krcmar 2018: 5; Kugler et al. 2018: 2; Pflaum et al. 2019: 61; Müller et al. 2019: 2; Nöcker 2018: 9).

There are scientists such as Albrecht (2015: 1 et seq.) who consider digital transformation as the creation of processes including the associated technology (Albrecht 2015: 3). The digital transformation is also viewed from the perspective of innovation and thus the progress of existing enterprise strategies which include, for instance, target markets and products to be sold (Kugler et al. 2018: 1 et seq.).

At this point, it makes sense to highlight that digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) is also considered in view of digitalization (Knoche et al. 2020: 26 et seq.). However, digitalization should not be viewed as synonymously to digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.). Digitalization rather includes technologies such as robotics, automation, cloud computing, and augmented reality (Knoche et al. 2020: 26 et seq.), whereas digital transformation describes the dimensions of the use of such technologies (Kieninger et al. 2015: 5 et seq.), which can be realized through the increased speed and quality in the supply of information and thus the more accurate results (Kieninger et al. 2015: 5 et seq.). Moreover, digital transformation can contribute to reducing errors, which can be also considered as a favorable outcome (Keimer et al. 2020: 2 et seq.).

In this respect, digitalization can be considered as a framework supporting digital transformation. This view is applied within the highlighted studies in Chapters 4.3 and 4.4 and should contribute to the exemplary use of the word digitalization instead of digital transformation in the afore-mentioned studies.

In this respect, a small selection of various definitions is listed below, which however should not be considered conclusively.

Table 6: Definitions of the term digital transformation.

Author	Definition
(Krcmar 2018: 5)	"There are four characteristics which describe digital transformation: Inescapability, irreversibility, tremendous speed and uncertainty in the execution".
(Kugler et al. 2018: 2)	"Enterprises undergoing digital transformation use the opportunities of information technology to increase the efficiency and productivity of processes".
(Pflaum et al. 2019: 61)	"Drivers of digital technology are regardless of application innovations in the field of information and communication technology".
(Müller et al. 2019: 2)	"On the one hand, digital transformation is changing our geo-economy as a system and thus has consequences for all economic actors".
(Nöcker 2018: 9)	"Digital transformation is a permanent task that begins with an active, systematical and conscious start to the digital conversion or new construction".

Source: Own depiction according to (Krcmar 2018: 5); Kugler et al. (2018: 2); Pflaum et al. (2019: 61); Müller et al. (2019: 2); Nöcker (2018: 9).

Based on the definitions shown above, the following definition can be derived from it:

"Digitalization is the first step toward digital transformation and contributes to develop efficiency and productivity within processes".

This view can be reasoned by that digital transformation contributes to review internal processes (Hügler et al. 2019: 53 et seq.), which can lead to

improved productivity. Thus, enterprises can identify weaknesses and eliminate them. This, in turn, can help enterprises to perform in the best possible manner. The efficiency and productivity gained through digitalization can be seen in low failures and improved customer relationships (Hügler et al. 2019: 53 et seq.). Both efficiency and productivity can moreover be realized, for instance, through increased online sales (Hügler et al. 2019: 53 et seq.).

It can be concluded that the majority of scientists follow the thought that digital transformation can be used as an enabler (Kieninger et al. 2015: 5 et seq.; Hügler et al. 2019: 53 et seq.) that contributes to positive changes. Moreover, it can contribute to an improved enterprise situation. For this reason, it makes sense for enterprises to analyze their current digital transformation status and to use digital maturity models (Schwalbach 2018: 122 et seq.; Bühler et al. 2018: 197), which can be helpful in the evaluation.

Thus, in the following, two maturity models will be exemplified.

4.2 DIGITAL MATURITY MODELS

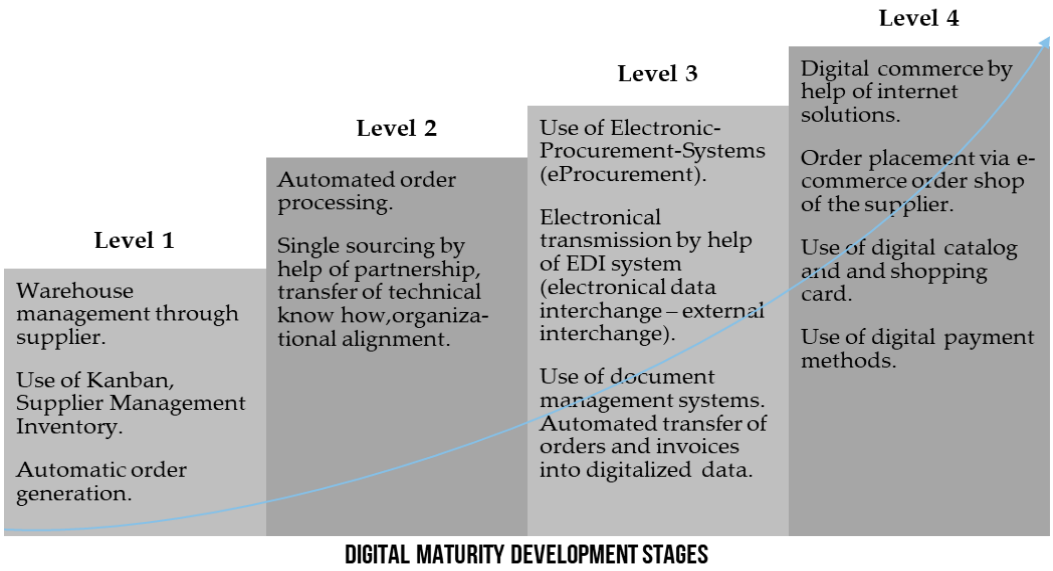
The exemplified digital maturity models (Schwalbach 2018: 122 et seq.; Bühler et al. 2018: 197) should help enterprises like SMEs to determine their current digital transformation status. Furthermore, these two digital maturity models (Schwalbach 2018: 122 et seq.; Bühler et al. 2018: 197) serve as a reference model for the self-created digital maturity model (Figure 11) of management accounting and its roles. The reason for this is that both models (Schwalbach 2018: 122 et seq.; Bühler et al. 2018: 197) are based on a similar progression, which means that both digital maturity models consist of consecutive phases (Schwalbach 2018: 122 et seq.). Thus, the next level can only be reached when the previous one is completely implemented (Schwalbach 2018: 122 et seq.). In view of the digital maturity model (Schwalbach 2018: 122 et seq.) created by management accounting and its roles (Figure 11), it can be assumed that the competencies depend on each other (Schwalbach 2018: 122 et seq.) and that the next level of skills which require a certain degree of digital competencies can be performed when skills of the current level are fully available (Schwalbach 2018: 122 et seq.). In this respect, it makes sense to state that most digital maturity models (Kraewing 2017: 69) usually consist of four to five stages (Kraewing 2017: 69).

4.2.1 Digital maturity model of Schwalbach (2018)

The digital maturity model of Schwalbach (2018: 122 et seq.) represents functions that are related to certain processes within procurement. Thus, it can be used to assess the digital maturity level within one's own competence field (Schwalbach 2018: 122 et seq.). The digital maturity level of the processes within procurement can, for instance, be identified with the aid of enterprise resource planning systems (ERP), provided that the ERP system includes a material planning process (Schwalbach 2018: 124). Thus, the level of digital transformation within procurement depends on the digital transformation level, agility, and partnership mindset of the supplier (Schwalbach 2018: 122 et seq.).

Ultimately, the digital maturity model of procurement provides the basis to assess the quality level of processes within procurement and to subsequently develop it further in collaboration with suppliers (Schwalbach 2018: 122 et seq.). In the following, the digital maturity model of Schwalbach (2018: 124) is exemplified.

Figure 8: Digital maturity model of procurement.



Source: Own depiction according to Schwalbach (2018: 124).

4.2.2 Digital maturity model by Bühler et al. (2018)

There are other explanations for digital maturity models such as the one of Bühler et al. (2018: 197). Bühler et al. (2018: 197) described the status of the digital maturity of an enterprise using five maturity levels. With the aid of this maturity model, enterprises can evaluate their digital maturity level regarding digital transformation (Bühler et al. 2018: 197).

Bühler et al. (2018: 197) introduced various perspectives into this digital maturity model. The perspectives include horizontal and vertical integration as well as digital consistency in construction logistics (Bühler et al. 2018: 197).

With the aid of the following figure, the development of digital maturity in construction logistics (Bühler et al. 2018: 197) is highlighted.

Figure 9: Digital maturity model in construction logistics.

Digital maturity level	**Scope**	**Scope**	**Scope**
	Vertical integration	**Horizontal integration**	**Digital continuity**
Level 5	**Digitized fully**	**Digitized fully**	**Digitized fully**
Complete digitization	Skills regarding digital change management. The digital transition is completed.	All necessary digital skills (agility, digital collaboration, digital literacy) are developed.	Data transfer and data exchange in real-time. Process support with the aid of the IT infra-structure Level 4. Use of Internet of Things (IoT).

Digital maturity level	Scope	Scope	Scope
Level 4	**Digitized vertically**	**Digitized horizontal**	**Digital continuity**
Availability & practice of digital conditions	Team spirit regarding change management is available.	Skills regarding digital business processes, innovation, and relationship networking are available. The practice of risk analysis and monitoring.	Process support with the aid of fourth level tools. High level of networking by use of homogenized applications.
Level 3	**Digitized internally**	**Digitized internally**	**Digitized internally**
Focus on digital transformation	Shaping of digital business planning. Conditions for digital processes are available.	Non-existing skills and competencies.	Process support with the aid of first- and second-level tools.
Level 2	**Digitized basically**	**Digitized basically**	**Digitized basically**
Existence of digital conditions	Existence of digital leadership mindset.	Non-existing skills and competencies.	Process support with the aid of second-level tools.
Level 1	**No digitalization**	**No digitalization**	**No digitalization**
Absence of digital conditions	Non-existing digitalized know-how.	Non-existing skills and competencies.	Process support with the aid of first-level tools.

Source: Own depiction according to Bühler et al. (2018: 197).

Based on the digital maturity levels listed, it becomes clear that by assessing one's own digital maturity level, enterprises can achieve higher levels of process

optimization and skills. This is already visible in both models from Level 3, which is then expanded with the aid of the fourth and fifth levels (Bühler et al. 2018: 19; Schwalbach 2018: 124).

Thus, both models have different approaches (Bühler et al. 2018: 19; Schwalbach 2018: 124). The exemplified digital maturity model of Schwalbach (2018: 124) is based on a specific aspect which, in this case, is the operations (Schwalbach 2018: 124), while the digital maturity model of Bühler et al. (2018: 197) considers the aspect of generality (Bühler et al. 2018: 19). The reason for using these two different digital maturity models (Bühler et al. 2018: 19; Schwalbach 2018: 124) is that little information is given in science about the assessment instruments regarding the degree of digital maturity (Bühler et al. 2018: 19; Schwalbach 2018: 124). This complicates the optimal application of digital maturity models in not strongly developed enterprises. In addition, the vast majority of scientists focuses on specific aspects, as the case with operations, which makes it difficult to determine the current position in view of digital maturity levels and fields of action which can contribute to increasing the level of maturity for enterprises that are more generally set up. Based on these exemplarily listed criticisms, a generally valid digital maturity model by Bühler et al. (2018: 197) was used besides the specific one which is, as stated earlier, about operations and hence exemplified by Schwalbach (2018: 124). Thus, enterprises that are strongly operationally positioned can use the digital maturity level model of Schwalbach (2018: 124) to assess their digital maturity level, while enterprises that are generally set up can use that of Bühler et al. (2018: 197).

The previously listed considerations give the opportunity to take a closer look at this topic in connection with SMEs and their digital maturity status. Thus, the following chapter will present studies on the degree of digital transformation in SMEs (BMWi 2017: 4 et seq.; Saam et al. 2016: 28 et seq.; McKinsey 2017: 2 et seq.).

With the aid of the studies listed below (BMWi 2017: 4 et seq.; Saam et al. 2016: 28 et seq.; McKinsey 2017: 2 et seq.), it will be analyzed to what extent enterprises use digital technologies at SMEs and within management accounting (BMWi 2017: 4 et seq.; Saam et al. 2016: 28 et seq.; McKinsey 2017: 2 et seq.) as it is closely related to the dissertation topic, which is about outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) management accounting functions (Wolf et al.

2017: 2 et seq.) at SMEs, and which can be carried out with the aid of digital transformation in its role as an enabler (Kessler et al. 2019: 87 et seq.).

4.3 STUDIES ON DIGITALIZATION IN SMALL AND MEDIUM-SIZED ENTERPRISES (SMES)

At this point, reference is made to Chapter 4.1, in which it is explained that digitalization can be considered as the supporting framework of digital transformation. This perspective is applied hereinafter.

Showing various studies (BMWi 2017: 4 et seq.; Saam et al. 2016: 28 et seq.; McKinsey 2017: 2 et seq.) on the degree of digitalization in SMEs aims to question the extent to which SMEs are taking advantage of it as a driving force (BMWi 2017: 4 et seq.; Saam et al. 2016: 28 et seq.; McKinsey 2017: 2 et seq.). So far, statements have been made that SMEs have weaknesses regarding digitalization. Digitalization contributes to changes. Digitalization has already left its mark on society, the economy, and enterprises; however, this fact has not yet arrived at all. This can be seen from that SMEs, in particular, lack experts who can accompany this change. Analyses show that almost 75 percent of enterprises aim at little or no change in their corporate culture and organization (Heyse 2018: 13). This behavior is also applicable to SMEs.

In this respect, digitalization can only be successful if employees are prepared for digitalization in advance, which is ultimately the task of digital transformation management (Heyse 2018: 13). In this respect, the strategy consulting firm McKinsey (2017: 2 et seq.) conducted an online survey entitled *Digitalization in SMEs* (McKinsey 2017: 2 et seq.), in which executives were interviewed about the state of digitalization in SMEs (McKinsey 2017: 2 et seq.). In the following, the study of McKinsey (2017: 2 et seq.), as well as various studies (BMWi 2017: 4 et seq.; Saam et al. 2016: 28 et seq.), are briefly evaluated. This should help to allow comparisons of the status quo of digitalization in SMEs in general and within management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.).

4.3.1 Study of McKinsey on the status of digitalization in SMEs (2017)

The results of the McKinsey study (2017: 2 et seq.) showed that many SMEs have recognized the importance of challenges caused by digitalization but are not ready to bring about changes (McKinsey 2017: 2 et seq.). Despite this result, there are – and this affects more than half of the enterprises surveyed – SMEs that rate their level of digitalization as being more than good and argue that they have created the technical prerequisites to participate in the digitalization (McKinsey 2017: 2 et seq.). This seems contradictory at first glance. Moreover, regarding digital applications, the study shows that SMEs regularly use digital marketing and online sales (McKinsey 2017: 6).

In view of online sales, customers can choose goods on the computer and order them directly. This possibility offers the advantage of saving time and costs, as travel costs to a shopping center can be saved. Moreover, in most cases, customers can return goods at no cost after a trial period of four weeks.

Moreover, the study shows that digitalization is considered an IT topic on the part of supervisors (McKinsey 2017:6). As a result, the IT structure has been converted accordingly to digitalization or appropriate measures for digitalization are being taken, such as workshops or project teams specialized in digitalization (McKinsey 2017: 6).

4.3.2 Study of BMWi on the status of digitalization in SMEs (2017)

There are other studies (BMWi 2017: 4 et seq.) on the state of digitalization in SMEs, such as that of the BMWi (2017: 4 et seq.), the Federal Ministry of Economics and Energy, which shows the following results (BMWi 2017: 4 et seq.):

- More than 30 percent expand their communication with customers through online marketing such as newsletter subscriptions, cookies, or customer accounts.
- Almost 50 percent create a customer profile and offer vouchers to their customers.
- More than 5 percent use networks and partnerships to make customer-oriented offers.
- Nearly 20 percent integrate their customers into their ecosystem and can thus receive feedback that leads to new product launches.

Moreover, the results show that there are SMEs that take advantage of the digitalization by using cloud computing (BMWi 2017: 4 et seq.), which can monitor entire devices with the aid of smartphones (BMWi 2017: 4 et seq.). Cloud computing (BMWi 2017: 4 et seq.) offers advantages such as constant availability in any size (BMWi 2017: 4 et seq.).

In addition, the analyses show that there are some SMEs that use augmented reality glasses that allow customers to track the process remotely (BMWi 2017: 4 et seq.). Augmented reality is the extension of reality with the aid of digitalization, which supports to ensure that customers receive the data they need (BMWi 2017: 4 et seq.). Customers can interact through applications (apps), which is different from video clips or films, for instance (BMWi 2017: 4 et seq.). Moreover, augmented reality offers the possibility of presenting complex topics in a simple way (BMWi 2017: 4 et seq.). Such projects can contribute to a trustful communication with the customer and advance projects that can be related to digitalization.

However, there are other SMEs that have implemented digital business models. For example, there is one SME that has implemented an online resource platform with its business partners. With the aid of this online resource platform, 3D production orders can be placed (BMWi 2017: 4 et seq.). This digital business model can contribute to reducing production downtimes, for instance (BMWi 2017: 4 et seq.).

4.3.3 Study of ZEW on the status of digitalization in SMEs (2016)

A study carried out by the ZEW (Saam et al. 2016: 28 et seq.), the Center for European Economic Research, shows that the awareness to combine different aspects relevant for success (Saam et al. 2016: 28 et seq.) is already present in some SMEs (Saam et al. 2016: 28 et seq.). Thus, there are SMEs who have considered both the application-based and the knowledge fields of digitalization (Saam et al. 2016: 28 et seq.). The study moreover shows that the measures taken by these SMEs will initially help to improve existing technology and skills and thus differ from the examples of SMEs presented earlier in this chapter.

The study carried out by the ZEW (Saam et al. 2016: 28 et seq.) moreover shows that the following measures have been implemented regarding technological projects: Redesign of the enterprise's homepage with digitalized

functions, cloud computing and new software, use of experienced off-site consultants (Accenture 2018), conversion of the workflow to digital work processes, and individual training in the IT field (Saam et al. 2016: 28 et seq.).

4.3.4 Findings from the studies on digitalization in small and medium-sized enterprises (SMEs)

The findings of studies researched (McKinsey 2017: 2 et seq.; BMWi 2017: 4 et seq.) shown earlier indicate that the importance of digitalization is not yet recognized at all SMEs researched (McKinsey 2017: 2 et seq.; BMWi 2017: 4 et seq.). Most of the SMEs studied lack courage, experience, and an understanding of digitalization (McKinsey 2017: 2 et seq.; BMWi 2017: 4 et seq.). Thus, it can be stated that not every enterprise is prepared to participate in digitalization (McKinsey 2017: 2 et seq.; BMWi 2017: 4 et seq.). This concerns both the skills of the employees and the digital applications (McKinsey 2017: 2 et seq.; BMWi 2017: 4 et seq.). Moreover, there are still SMEs (McKinsey 2017: 6) that refuse to take responsibility for digitalization by viewing the field of information technology (IT) as the one responsible for digitalization (McKinsey 2017: 6). There are therefore different perspectives on the topic of digitalization, which contributes to that the topic of digitalization in SMEs is to be researched for its current relevance with the aid of the own study. Even though some of the SMEs researched use digital technologies (BMWi 2017: 4 et seq.; Saam et al. 2016: 28 et seq.), it can be assumed with help of the studies outlined earlier that their proportion and the extent to which digitalization is applied does not fulfill the required standards of digitalization to meet requirements placed on them by stakeholders.

As a result, the outlined studies will serve as examples for the own study, which intends to research the status quo of digitalization among the SMEs surveyed. Moreover, the studies should contribute to determining whether attitudes, competencies, and applications (Gleich et al. 2016: 73 et seq.; Kaltenbacher 2011: 78; Piezonka 2013: 13) have changed regarding digitalization. The topic of digitalization or digital transformation is important for the own work insofar as it is viewed as an enabler (Kessler et al. 2019: 87 et seq.) that can contribute to the creation of an off-site management accounting (Horak 1995: 128; 1991: 60) at SMEs.

The findings shown above give the opportunity to investigate SMEs regarding their digitalization status in management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.). This will be explored in the following chapter.

4.4 STUDIES ON SMES REGARDING THEIR DIGITALIZATION STATUS IN MANAGEMENT ACCOUNTING

Analyzing the digitalization status in management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) of SMEs can be justified by that it plays a role in answering the research question. Moreover, some of the results are also used for the own study to draw comparisons and to analyze whether the ways of looking at digitalization and outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) of management accounting functions (Wolf et al. 2017: 2 et seq.) have changed on the part of SMEs.

4.4.1 The study by Deloitte (2008)

The study by Deloitte (2008), an international business consulting and financial advisory services enterprise (Deloitte 2008), compares manager-led and owner-managed SMEs (Deloitte 2008) in view of management accounting and their use of digitalization (Deloitte 2008). The study moreover shows that the presence of management accounting depends primarily on the management culture, and hence, owner-managed SMEs have small to hardly any management accounting departments (Deloitte 2008: 7 et seq.). Thus, this makes analysis of the digitalization status difficult.

Moreover, it can be concluded that SMEs still show deficiencies (Deloitte 2008: 7 et seq.) regarding management accounting functions (Deloitte 2008: 7 et seq.; Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.). This is difficult to understand within the scope of globalization and challenges such as digitalization. Moreover, the study (Deloitte 2008: 7 et seq.) shows that the outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) of management accounting functions (Wolf et al. 2017: 2 et seq.) to service partners who are used to working with digital applications (Deloitte 2008: 7 et seq.) is less than 5 percent for

owner-managed SMEs (Deloitte 2008: 7 et seq.). This is slightly more than for manager-led SMEs as it is less than 3 percent (Deloitte 2008: 7 et seq.). Significant differences can be observed in the number of specialized on-site management accountants. Only half of the owner-managed SMEs employ on-site management accountants, while almost all manager-led SMEs employ on-site management accountants (Deloitte 2008: 7 et seq.). Furthermore, the results show that in more than 30 percent of the cases (Deloitte 2008: 7 et seq.), the owner himself performs the management accounting functions (Deloitte 2008: 7 et seq.). Practice however shows that owners have limited business skills or little knowledge about digitalization (Deloitte 2008: 7 et seq.) and are not able to realize the necessity of management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) and the challenges posed by digitalization. Consequently, projects related to digitalization can hardly be realized and mastered by the managers of SMEs.

On this basis, the study shows that the degree of digitalization within management accounting is low or non-existent among the SMEs analyzed (Deloitte 2008: 7 et seq.).

Moreover, the SMEs analyzed consider management accounting functions (Wolf et al. 2017: 2 et seq.) to be functions that control figures, and as a consequence, functions such as strategic planning or weakness analyses are only performed by 50 percent of SMEs (Deloitte 2008: 7 et seq.). Almost ten years later, in 2018, the progress of the digitalization in management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) for SMEs looks different. This can be realized with the aid of the following studies, as they show that the first steps are being taken.

4.4.2 The study by Diamant (2017)

The following study, carried out by the management consultancy company Diamant, shows that more than 60 percent of SMEs have a digitalization strategy and that more than 90 percent of these strategies can be assigned to management accounting (Diamant 2017: 2 et seq.). Thus, it can be realized that management accounting plays a significant role within enterprises and in particular in enterprises that have recognized the importance of digitalization (Diamant 2017: 2

et seq.). Moreover, expectations are also placed on digitalized management accounting as it supports enterprise management in making decisions (Diamant 2017: 2 et seq.). The results show that the spreadsheet calculation program Excel is still the most frequently used tool within management accounting and that it is used in 50 percent of all cases where decisions are to be made by SME management (Diamant 2017: 2 et seq.). In comparison, other solutions such as Business Intelligence are used to a lesser extent so that Business Intelligence is used by almost 13 percent of the enterprises surveyed (Diamant 2017: 6). Moreover, the study (Diamant 2017: 6) carried out shows that almost 50 percent of the SMEs surveyed (Diamant 2017: 6) still store information on their computers (Diamant 2017: 6) and that almost two-thirds of the SMEs (Diamant 2017: 6) use email clients as a communication tool (Diamant 2017: 2 et seq.). However, e-mails can be sent to the wrong recipients, and this is only one of the possible sources of error.

However, the procedure can be improved with the aid of digitalization, thus minimizing errors while sending data. Cloud solutions, for example, are ideal as they offer high flexibility and can help minimize errors. Whether such solutions are also of interest to SMEs was also examined in this study. The results showed that less than a fifth of the SMEs surveyed apply cloud solutions (Diamant 2017: 2 et seq.) as a good alternative, 15 percent already use cloud solutions (Diamant 2017: 2 et seq.), almost 25 percent have not yet addressed this issue, and more than 50 percent are not considering using cloud-based solutions (Diamant 2017: 2 et seq.).

The results of the last group, in particular, show that most SMEs lack an understanding of the requirements for participating in the digitalization, as cloud solutions provide the basis for participating in this challenge. This is surprising, however, as cloud solutions are a widespread topic in view of digitalization.

In the response to the question of how management accounting will be performed in the next years (Diamant 2017: 2 et seq.), only half of the respondents answered that they were considering applying cloud solutions (Diamant 2017: 2 et seq.). Therefore, the results show that future progress regarding digitalization is not relevant for most SMEs (Diamant 2017: 2 et seq.).

Furthermore, the topic of outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) was also part of the study conducted by Diamant. Three-quarters of the SMEs surveyed (Diamant 2017: 2 et seq.) stated that they did not consider it necessary to outsource management accounting completely (Diamant 2017: 2 et

seq.) in the coming years or to transfer certain management accounting functions (Wolf et al. 2017: 2 et seq.) to a service partner (Diamant 2017: 2 et seq.). The reasons given were dependence and lack of trust (Diamant 2017: 2 et seq.).

4.4.3 The study by KPMG (2018)

Further studies, including those of the management consulting enterprise KPMG (2018: 5 et seq.), show comparatively similar results regarding cloud solutions in management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) in SMEs, for instance. This is an important indication for the own study since this topic will be researched with the aid of the own study. In this respect, half of the enterprises surveyed do not consider it necessary to use cloud solutions (KPMG 2018: 5 et seq.) in management accounting in the next few years, nevertheless, almost 25 percent of the enterprises surveyed have launched a pilot project on cloud computing (KPMG 2018: 5 et seq.).

This shows that at least a quarter of the SMEs surveyed are interested in projects related to digitalization (KPMG 2018: 5 et seq.) as they are willing to bring about change. Moreover, almost 75 percent of the SMEs surveyed have recognized the benefits of digitalization, such as unlimited data access or cost savings (KPMG 2018: 5 et seq.). Further aspects of the study were the developments in management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) caused by digitalization.

Almost two-thirds of the SMEs surveyed (KPMG 2018: 5 et seq.) stated that the digitalization has contributed to making management accounting data more accurate and understandable (KPMG 2018: 5 et seq.), and that as a result, they have been able to simplify their decision-making processes (KPMG 2018: 5 et seq.). Most of the SMEs surveyed (KPMG 2018: 5 et seq.) also recognized that digitalization provides the basis to process larger amounts of data (KPMG 2018: 5 et seq.) and that this may be due to that, within the scope of digitalization, management accountants are more likely to act as business partners (KPMG 2018: 5 et seq.) and, as a result, are able to process previously unprocessed amounts of data (KPMG 2018: 5 et seq.).

Moreover, the study participants confirmed that management accounting now provides data that, for example, contribute to more precise planning through predictive analytics (KPMG 2018: 5 et seq.). Another positive effect that the digitalization offers for enterprises is that three-quarters of the study participants confirmed that management accounting is more cost-efficient (KPMG 2018: 5 et seq.).

4.4.4 Findings from the studies on SMEs regarding their digitalization status in management accounting

The exemplified studies show that the digitalization has to some extent arrived in management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) at SMEs. There are SMEs that successfully use tools in management accounting that are related to digitalization (KPMG 2018: 5 et seq.; Diamant 2017: 6), however do not use them in all areas of management accounting (KPMG 2018: 5 et seq.). One possible reason may be that SMEs have limited know-how when it comes to using tools related to digitalization (Deloitte 2008: 7 et seq.). This results in that digitalization is existing to a lesser extent in SMEs (Deloitte 2008: 7 et seq.). This can in particular be realized by that the Excel spreadsheet is still the most used tool within management accounting (Diamant 2017: 2 et seq.). Tools that can be related to digitalization, such as Business Intelligence, are still far too little used (Diamant 2017: 2 et seq.). This is compounded by that tools such as cloud solutions are also viewed as less important (KPMG 2018: 5 et seq.).

This attitude can jeopardize the existence of SMEs, as there are too many requirements that SMEs must meet, which is due to their economic strengths and expectations placed on SMEs on the part of economic and political actors. Thus, the acceptance of digitalization within management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) must be increased. In this respect, missing competencies, and applications (Gleich et al. 2016: 73 et seq.; Kaltenbacher 2011: 78; Piezonka 2013: 13) can be purchased.

It is important to mention that with the aid of the own study, the ways of thinking in view of digitalization in management accounting (Zimmermann 2001:

10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) will be analyzed for their validity.

In view of missing competencies and applications (Gleich et al. 2016: 73 et seq.; Kaltenbacher 2011: 78; Piezonka 2013: 13), there is the option to purchase competencies and applications related to digitalization and management accounting through outsourcing measures (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11). The topic of outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) will thus be discussed with the aid of the following chapter.

5 OUTSOURCING AS A METHOD TO IMPROVE FOCUS AND EFFICIENCY

Many employees have a negative attitude toward outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) as they fear comprehensive changes. They associate the term outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) with job cuts and job losses. Enterprises, however, ascribe positive attributes such as process optimization (Schewe et al. 2007: 3) to the term outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11). Moreover, with help of outsourcing measures (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11), enterprises want to concentrate on their core business (Knop 2009: 14; Lohr 2012: 35 et seg.; Becker et al. 2014: 66) and operate more efficiently. In addition, enterprises use outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) to meet requirements placed on them by, for instance, stakeholders, society, and the economy (Bagad 2009: 11 et seq.).

The aim of this chapter is first to define the term outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) and then to explain the approach of Business Process Outsourcing (Sople 2009: 124 et seq.). Business Process Outsorcing (BPO) offers the basis for improvements by allowing enterprises, including SMEs, to review and adapt processes that can be relevant regarding the creation of off-site management accounting (Horak 1995: 128; Pössl 1991: 60). Moreover, it offers the possibility to focus on core business (Knop 2009: 14; Lohr 2012: 35 et seg.; Becker et al. 2014: 66). This in turn helps enterprises to create free capacities for other topics that are part of their core business (Knop 2009: 14; Lohr 2012: 35 et seg.; Becker et al. 2014: 66).

5.1 DEFINITION OF THE TERM OUTSOURCING

The term outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) is not a new topic and was already booming in the 1990s (Schewe et al. 2007: 2 et seq.). Outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) is, for instance, about the transfer of tasks from the production or commercial area to service partners (Schewe et al. 2007: 2 et seq.). Thus, it is about collaboration with experts who are located outside the enterprise.

At this stage, it makes sense to highlight that the idea of outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) developed and was later expanded to include considerations such as the standardization of processes and measures to improve business processes (Schewe et al. 2007: 3). This contributed to the collaboration with Business Process Outsourcers (Accenture 2018).

Before highlighting the topic of Business Process Outsourcing (BPO) (Accenture 2018) in detail, reference will be made to the option of an off-site management accounting (Horak 1995: 128; Pössl 1991: 60) as a possible solution for SMEs. SMEs can create an off-site management accounting (Horak 1995: 128; Pössl 1991: 60) with help of outsourcing measures (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11). This solution seems to be a more desirable option compared to the use of project-related contractors (NordConsulting 2021; SBU Götz Concept 2021; Karin Menne - Interim Management 2021; Zahlenklar accounting & Consulting 2020; Modul-Consult 2021) who act as individual businesses and offer their services in the field of management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.). As mentioned at the beginning of this chapter outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) can contribute to review and adjust processes (Bagad 2009: 11 et seq.) which in turn can result in improvements (Bagad 2009: 11 et seq.). In this respect, due to the expectations and requirements placed on SMEs and the challenges posed by digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.), SMEs can refer to Business Process Outsourcers (BPOs) which, as introduced above, offer the extended form of outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11).

Thus, this topic will be analyzed with help of the following chapter.

5.2 BUSINESS PROCESS OUTSOURCING APPROACH

Business Process Outsourcing (BPO) (Accenture 2018) can be characterized by the fact that duties, as well as responsibilities, are given by enterprises to off-site service partners with help of a service agreement (Sople 2009: 124 et seq.). Such service agreements, in general, include a requirement profile that involves the services to be provided, goals to be achieved, and regulations regarding a trustful collaboration (Sople 2009: 124 et seq.). In this conjunction, service agreements with

Business Process Outsourcers (BPOs) aim to continuously improve the provided service (Sople 2009: 124 et seq.). Moreover, their service also includes the provision of the required infrastructure (Bagad 2009: 11 et seq.).

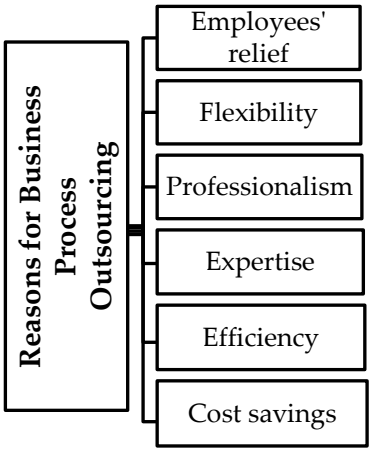
Furthermore, Business Process Outsourcing (BPO) (Accenture 2018) contributes to concentrating on core business (Knop 2009: 14; Lohr 2012: 35 et seg.; Becker et al. 2014: 66). Focusing on the core business, however, requires the progress of certain skills that help to be successful in topics related to the core business (Knop 2009: 14; Lohr 2012: 35 et seg.; Becker et al. 2014: 66). Business Process Outsourcing (BPO) (Accenture 2018) is predestined for such projects as it offers time capacities that can be used for progress measures regarding employees, products, services, and equipment related to the core business (Knop 2009: 14; Lohr 2012: 35 et seg.; Becker et al. 2014: 66). In any case, progress measures lead to an increase in efficiency (Marquardt 2003: 86).

Moreover, progress measures help enterprises to offer different products and services compared to the competition (Marquardt 2003: 86). Enterprises that use Business Process Outsourcing partners (Accenture 2018), for instance, minimize their risk since the obligation to deliver high quality, and thus responsibilities (Bruch 1998: 31 et seq.), are transferred to the outsourcing partner (Gross et al. 2006: 160; Bagad 2009: 11 et seq.).

Suchlike services are offered by Business Process Outsourcers (BPOs) such as Accenture (2018). At this point, it makes sense to point out that Business Process Outsourcers (Accenture 2018) are involved in many more topics and offer services that are related to management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) and digital transformation (Accenture 2018). In this respect, Business Process Outsourcers (Accenture 2018) perform tasks like that of a management accountant (Accenture 2018) and thus act as off-site management accounting consultants.

The following figure highlights a selection of reasons for Business Process Outsourcing (BPO) (Sople 2009: 124 et seq.), which should provide the basis to assess the circumstances contributing to outsourcing measures (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) by the enterprises (Bagad 2009: 11 et seq.).

Figure 10: Reasons for Business Process Outsourcing.



Source: Own depiction according to Bruch (1998: 31 et seq.).

Consequently, it can be concluded that the approach of Business Process Outsourcing (Sople 2009: 124 et seq.) can be a suitable option for SMEs in view of the creation of an off-site management accounting (Horak 1995: 128; Pössl 1991: 60) due to topics such as process optimization (Schewe et al. 2007: 3) and digital transformation (Keimer et al. 2020: 2 et seq.).

With the aid of the following chapter, the impact of digital transformation (Keimer et al. 2020: 2 et seq.) on management accounting outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) will be highlighted.

6 IMPACT OF DIGITAL TRANSFORMATION ON MANAGEMENT ACCOUNTING AND OUTSOURCING

Digital transformation will influence management accounting (Keimer et al. 2020: 2 et seq.; Kessler et al. 2019: 87 et seq.), which requires the transfer of management accounting functions (Wolf et al. 2017: 2 et seq.) to off-site management accounting consultants (Heimel et al. 2019: 402). In this respect, digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) will contribute to reviewing processes and to identifying weaknesses within management accounting (Keimer et al. 2020: 2 et seq.; Kessler et al. 2019: 87 et seq.). Moreover, digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) helps to use technologies such as cloud solutions and Business Intelligence (BI), which are suitable to reduce the sources of error within management accounting (Keimer et al. 2020: 2 et seq.). In this respect, SMEs should decide which of the management accounting functions (Wolf et al. 2017: 2 et seq.) are suitable for an on-site management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149) and which are rather suitable for an off-site management accounting (Horak 1995: 128) that can be realized with help of outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11).

In the first step, it is shown how the digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) will influence management accounting (Keimer et al. 2020: 2 et seq.; Kessler et al. 2019: 87 et seq.). Moreover, it is analyzed how it affects the job profile of management accountants (Kaltenbacher 2011: 78). The second step shows how digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) affects off-site management accounting (Horak 1995: 128) by highlighting the possibilities. Subsequently, its impact on outsourcing (Sierke et al. 2017: 23 et seq.) will be shown, followed by the services of Business Process Outsourcers (Accenture 2018). Finally, management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) for outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) at SMEs are considered.

6.1 DIGITAL TRANSFORMATION AND MANAGEMENT ACCOUNTING

Digital transformation can contribute to minimizing errors within management accounting (Keimer et al. 2020: 2 et seq.). The status of management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) is changing due to digital transformation in the direction of high automation and standardization (Keimer et al. 2020: 2 et seq.), which poses challenges for enterprises, including SMEs. The digital transformation will change the focus of SMEs with the result that the focus will be more on projects and procedures with a specific concept (Gleich et al. 2016: 53). Consequently, management accounting will be forced to provide data that are better prepared than before (Keimer et al. 2020: 2 et seq.). Enterprises like SMEs have expectations regarding information supply. The management of SMEs expects decision-relevant data to be available immediately, and this requires process automatization (Behringer 2018: 112).

Moreover, digital transformation (Kessler et al. 2019: 87 et seq.) will contribute to improved productivity within management accounting (Kessler et al. 2019: 87 et seq.). In any case, the digital transformation will change management accounting in its role as an enabler (Kessler et al. 2019: 87 et seq.).

More precisely, it will change the future picture of management accounting (Kieninger et al. 2016: 2 et seq.). In this respect, there are even assumptions that management accounting will lose value as everything is now represented only by new technologies (Kieninger et al. 2016: 2 et seq.). Anyway, management accounting cannot be viewed in isolation from digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.). In this respect, the word synergies fits both, as it describes what digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) and management accounting ultimately contribute to.

Digital transformation will contribute to influencing the forecasts (Kieninger et al. 2015: 5 et seq.). In the future, the forecast generation will be automated, which in turn will contribute to a higher speed and quality in the supply of information and more accurate results (Kieninger et al. 2015: 5 et seq.). Basically, the digital transformation will strongly influence something essential, namely the supply of information (Kieninger et al. 2015: 5 et seq.).

However, the digital transformation will affect much more than that. It will contribute to greater agility (Gehrckens 2016: 80 et seq.).

The fact that digital transformation contributes to agility (Gehrckens 2016: 80 et seq.) will significantly shorten the planning cycle (Heinrich 2018: 116). This challenge must first be mastered. In addition, digital transformation will contribute to rapid decision-making on the part of enterprise management (Kieninger et al. 2015: 5 et seq.).

Enterprises, including SMEs, will be forced to employ employees who can perform tasks due to challenges caused by digital transformation, competitive pressure, and high expectations of the stakeholders (Kaltenbacher 2011: 78). This can be seen in that the controller or management accountant will have to perform tasks and roles that can be found, among others, in the role of the navigator (Weber et al. 2000: 184 et seq.). At this stage, it is important to mention that the previous tasks of the controller or management accountant (Weber et al. 2000: 184 et seq.), such as budgeting and month-end closing (Weber et al. 2000: 184 et seq.), will continue to be performed in parts, but expanded by additional ones (Weber et al. 2000: 184 et seq.; Horváth et al. 2014: 47 et seq.; Stockinger et al. 2016: 59 et seq.; Schuhmann et al. 2016: 453 et seq.; Sesler et al. 2020: 4 et seq.; Gleich 2013: 33 et seq.). In this respect, it is assumed that the role and tasks of the navigator, such as weak point analysis and realization planning (Weber et al. 2000: 184 et seq.), will then be expanded by that of the change manager, data scientist, and business partner (Horváth et al. 2014: 47 et seq.; Sesler et al. 2020: 4 et seq.; Gleich 2013: 33 et seq.).

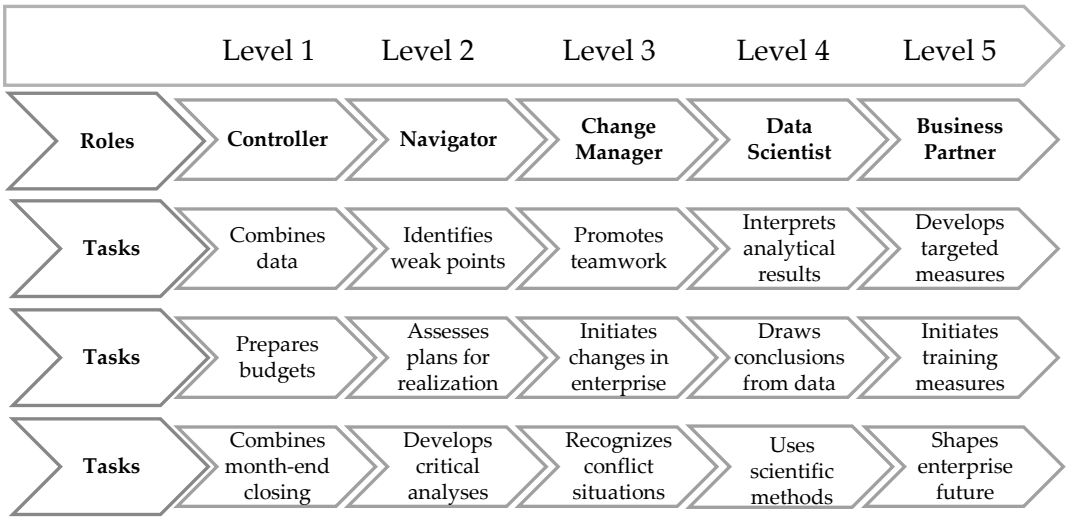
These roles will be highlighted in the following. The role of the change manager includes tasks such as the promotion of teamwork and resolving of conflicts (Gleich 2013: 33 et seq.), while the role of the data scientists (Horváth et al. 2014: 47 et seq.) includes tasks such as selecting and connecting data and drawing conclusions (Horváth et al. 2014: 47 et seq.) that are relevant to business decisions (Horváth et al. 2014: 47 et seq.). At this stage, it makes sense to mention that the role and tasks of the data scientist (Horváth et al. 2014: 47 et seq.) could play a bigger part within management accounting in comparison to the other roles and tasks due to digital transformation (Horváth et al. 2014: 47 et seq.). For this reason, further requirements placed on data scientists are shown in the following. Thus, scientific know-how is expected from the data scientists since the data are

examined using scientific methods (Horváth et al. 2014: 47 et seq.). This requires knowledge in the fields of statistics, business administration, mathematics, and computer science. Consequently, these areas of responsibility require a degree in mathematics, computer science, or statistics. Moreover, the demands on data scientists are high, and the function requires a university degree that includes an analytical and conceptual mind, a strong understanding of data analysis, and basic knowledge of software progress (Stockinger et al. 2016: 59 et seq.). Moreover, data scientists should not only be able to demonstrate expertise such as data analysis and its interpretation but also a certain level of social skills (Schuhmann et al. 2016: 453 et seq.). Regarding the role of the business partner (Sesler et al. 2020: 4 et seq.), it can be stated that it involves tasks such as the shaping of the future of the enterprise and initiation of training measures (Sesler et al. 2020: 4 et seq.).

The previously shown thoughts and statements of the scientists (Weber et al. 2000: 184 et seq.; Horváth et al. 2014: 47 et seq.; Stockinger et al. 2016: 59 et seq.; Schuhmann et al. 2016: 453 et seq.; Sesler et al. 2020: 4 et seq.; Gleich 2013: 33 et seq.) resulted in a combination that finally helped to create an own depiction.

Thus, the change in the roles and tasks within management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) will be shown with help of Figure 11. In addition, with help of Figure 11, enterprises should be given the opportunity to evaluate their own digital maturity level of management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) and its roles.

Figure 11: Change in the roles and tasks within management accounting.



Source: Own depiction according to Weber et al. (2000: 184 et seq.); Horváth et al. (2014: 47 et seq.); Stockinger et al. (2016: 59 et seq.); Schuhmann et al. (2016: 453 et seq.); Sesler et al. (2020: 4 et seq.); Gleich (2013: 33 et seq.).

Summarized, it can be concluded that most of the scientists (Kieninger et al. 2015: 5 et seq.; Heinrich 2018: 116) consider that digital transformation will transform management accounting into a more valuable one (Kieninger et al. 2015: 5 et seq.; Heinrich 2018: 116). This requires know-how in data science. Thus, it seems reasonable to hire an employee who has know-how in data science. Moreover, practice shows that SMEs have difficulties in hiring skilled employees, as already stated in the previous chapters. Looking back at proposed measures such as recruiting by setting up an own recruiting channel (networking through XING, LinkedIn, Facebook, Twitter) may initially turn out to be inefficient due to

lack of time or other reasons. Therefore, it makes sense to consider other alternatives. SMEs have the option of outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) that, for instance, are related to digital transformation, data science and can thus create off-site management accounting (Horak 1995: 128; Pössl 1991: 60).

In this respect, digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) will be analyzed within the scope of off-site management accounting (Horak 1995: 128; Pössl 1991: 60) with the aid of the following chapter.

6.2 DIGITAL TRANSFORMATION AND OFF-SITE MANAGEMENT ACCOUNTING

So far, the importance of digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) has been highlighted for management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.). To narrow down the topic regarding the dissertation project, the following chapter will reveal the impact of digital transformation (Keimer et al. 2020: 2 et seq.; Kessler et al. 2019: 87 et seq.) on off-site management accounting (Heimel et al. 2019: 402), which can be realized with help of outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.).

Through the digital transformation (Keimer et al. 2020: 2 et seq.; Kessler et al. 2019: 87 et seq.), which can contribute to improved data analysis and efficiency, and productivity (Gleich et al. 2016: 73 et seq.; Heimel et al. 2019: 402) enterprises such as SMEs can derive recommendations for proactive behavior (Accenture 2018). Moreover, in connection with the digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.), cloud computing, the Internet of Things, and Business Intelligence (BI) (Bühler et al. 2018: 197; BMWi 2017: 4 et seq.; Diamant 2017: 6) are becoming increasingly important, making requirements related to data science and data warehousing (Gleich et al. 2016: 73 et seq.) more attractive for enterprises, not least due to cost savings (Gleich et al. 2016: 73 et seq.). Such services can be provided by Business Process Outsourcers (BPOs) (Accenture 2018), whose service

includes the duties of an off-site management accounting consultant and can be used by enterprises, including SMEs.

Due to their extensive know-how, Business Process Outsourcers (BPOs) are already able to offer consulting services in connection with digital transformation (Accenture 2018). They use solutions such as cloud computing to provide real-time data to enterprise management (Accenture 2018).

Thus, such solutions show that management accounting can always be carried out by service partners who act as off-site management accounting consultants (Heimel et al. 2019: 402). In addition, solutions such as cloud computing can help both – enterprise management and off-site management accounting partners – to access data simultaneously so that they can communicate immediately (Heimel et al. 2019: 402).

Moreover, digital transformation will help off-site management accounting consultants to use predictive analytics and digital tools which contribute to more precise data evaluation (Gleich et al. 2016: 73 et seq.). As a result, off-site management accounting consultants experience the high relevance of digital transformation and can thus strengthen their position as service partners for the management of SMEs.

Furthermore, digital transformation will contribute to replacing manual reporting with automation, which was previously generated using Excel spreadsheets (Gleich et al. 2016: 73 et seq.). Moreover, the quality of reporting is also improved, which can be achieved by illuminating future scenarios and creating parallel worlds (Gleich et al. 2016: 73 et seq.), which in turn contributes to better decision-making by enterprise management (Gleich et al. 2016: 73 et seq.).

It can be concluded that digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) can contribute to advance off-site management accounting (Horak 1995: 128; Pössl 1991: 60). It offers SMEs the possibility to participate in further developed technologies, process optimization, efficiency, productivity, and improved decision-making (Gleich et al. 2016: 73 et seq.; Heimel et al. 2019: 402). In this respect, SMEs can prefer to outsource parts of management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.), or functions as a whole, and contract outsourcing companies (Accenture 2018) whose services include, for instance, advisory services (Accenture 2018) regarding

management accounting and digital transformation (Accenture 2018). Thus, expertise in, for instance, Business Intelligence (BI) solutions, Big Data analysis, data science, and other fields can be purchased (Accenture 2018). In this respect, company-specific peculiarities should be the basis to opt for partial or whole outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) of management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.). In this respect, both options require collaboration with outsourcing companies, and Business Process Outsourcers (BPOs) (Accenture 2018) can be a suitable option for SMEs.

In this respect, digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) will be considered in conjunction with outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) with the aid of the next chapter.

6.3 DIGITAL TRANSFORMATION AND OUTSOURCING

Enterprises like SMEs can master challenges caused by digital transformation (Keimer et al. 2020: 2 et seq.; Kessler et al. 2019: 87 et seq.) with the aid of outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11). One of these challenges is the creation of off-site management accounting (Horak 1995: 128; Pössl 1991: 60), which can be realized with the aid of outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11). Thus, outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) can be considered as the path to non-project-related off-site management accounting for SMEs (Sierke et al. 2017: 23 et seq.).

SMEs can refer to Business Process Outsourcers (BPOs) (Accenture 2018) due to a lack of know-how regarding, for instance, digital transformation, data science, and application-based resources (Accenture 2018).

It can be assumed that digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) requires customized skills and competencies (Gleich et al. 2016: 73 et seq.; Kaltenbacher 2011: 78; Piezonka 2013: 13). After all, it is a challenge that must be mastered with great know-how. Consequently, employees with analytical skills such as data scientists should be recruited and deployed to implement entrepreneurial projects. However, such intentions are not quite as simple as they first appear.

It can be assumed that the strong demand will advance high salary claims for data scientists. However, not every enterprise, including SMEs, can meet such salary requirements due to financial restrictions (Kolb 2006: 12).

Enterprises, including SMEs, can outsource (Schewe et al. 2007: 3) management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) related to the digital transformation, such as analytics, to off-site service partners such as Business Process Outsourcers (BPOs) (Accenture 2018). Business Process Outsourcing (BPO) (Accenture 2018) also includes consulting services in the field of management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.; Accenture 2018). As mentioned before, Business Process Outsourcers (BPOs) act as off-site management accounting consultants (Accenture 2018).

This option seems to be faster and cheaper than recruiting and employing data scientists as there are service partners such as Business Process Outsourcers (BPOs) who already specialize in data science and can thus offer services that meet the needs of enterprises (Accenture 2018).

Moreover, scientists such as Dittrich et al. (2004: 8) point out that with the aid of Business Process Outsourcers (BPOs) (Accenture 2018), enterprises could continue to develop and operate more efficiently and productively (Dittrich et al. 2004: 8).

It will inevitably be the case that SMEs will have to react more strongly to digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) due to requirements placed on them by, for instance, stakeholders and competitive pressure. Service partners such as Business Process Outsourcers (BPOs) (Accenture 2018) can be helpful here, as developing their own competencies (Gleich et al. 2016: 73 et seq.; Kaltenbacher 2011: 78; Piezonka 2013: 13) regarding, for instance, process optimization would probably be both difficult and time-consuming. Owing to this fact, it makes sense to analyze the services of Business Process Outsourcers (BPOs) (Accenture 2018) in more detail.

Thus, the services of Business Process Outsourcers (BPOs) (Accenture 2018) will be analyzed with the aid of the following chapter.

6.4 SERVICES OF BUSINESS PROCESS OUTSOURCERS (BPOS)

In the following, the services, and successes of the Business Process Outsourcer Accenture (2018) will be shown. Certainly, there are other enterprises that can be cited in the field of Business Process Outsourcing (BPO) (Accenture 2018). However, Accenture (2018) should be representative of the other enterprises offering the same service.

Accenture (2018), which is a Business Process Outsourcer, offers a wide range of services for enterprises, including SMEs. The service covers skills related to finance, management accounting, supply chain, and healthcare, among others. Accenture contributes to better business results through the use of analytics and artificial intelligence (Accenture 2018). This goal can be achieved by first analyzing the strategic goals of the enterprise, followed by a design and creation phase (Accenture 2018). Moreover, Accenture (2018) supports enterprises like SMEs to be successful in their business by evaluating data that helps to provide recommendations for action through prescriptive analytics (Accenture 2018).

In addition, Accenture (2018) is promoting its services with successes in medium-sized enterprises (Accenture 2018). For instance, EOS Technology Solutions, a medium-sized enterprise specializing in IT products and systems, decided to provide product-oriented operating models for digital transformation (Accenture 2018). Ultimately, they intended to offer product progress and service support in the IT sector more efficiently (Accenture 2018).

To achieve this goal, project teams (Accenture 2018) were formed, which were responsible for the entire project cycle (Accenture 2018) with the aid of IT applications (Accenture 2018). This ensured comprehensive customer service and rapid response to customer-oriented solutions (Accenture 2018).

Turning to the topic regarding the choice of individual businesses for off-site management accounting (Horak 1995: 128; Pössl 1991: 60) (see Chapter 3.2.5), it seems more appropriate to collaborate with service partners such as Business Process Outsourcers (BPOs) (Accenture 2018), which are also engaged in supporting SMEs regarding management accounting issues, as their focus is additionally on digital transformation, analytics, and process optimization (Accenture 2018). As a result, enterprises like SMEs can be much more successful

and cope with master requirements placed on them by using the services offered by Business Process Outsourcers (BPOs) (Accenture 2018).

In this respect, it makes sense to analyze which management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) should be preferred for outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) to service partners such as Business Process Outsourcers (BPOs) (Accenture 2018) by SMEs.

Thus, this topic will be dealt within the following chapter.

6.5 MANAGEMENT ACCOUNTING FUNCTIONS FOR OUTSOURCING AT SMEs

With help of the following chapter, management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) for outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) measures will be examined.

Moreover, in view of the digital transformation (Kieninger et al. 2015: 5 et seq.), it is also useful to analyze the scope of the use of management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.), such as planning, information, analyses, and steering in SMEs (Mehlan 2007: 11; Tschandl 2012: 16), to assess Business Process Outsourcing (BPO) potentials (Dittrich et al. 2004: 8).

In this respect, SMEs should be aware that missing know-how should be purchased or obtained through outsourcing measures (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11). Given this, it can be realized that there are still SMEs that lack data science know-how (Horváth et al. 2014: 47 et seq.). Data science can, however, contribute to qualified information supply (Horváth et al. 2014: 47 et seq.). The importance of this topic has been addressed so far. As consequence, it would be reasonable to outsource (Schewe et al. 2007: 2 et seq.) management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) that can be related to data science (Horváth et al. 2014: 47 et seq.). Moreover, the digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) requires know-how in data science, and this fact underlines the importance of the digital transformation for management accounting (Kieninger et al. 2015: 5 et seq.; Mehlan 2007: 11; Tschandl 2012: 16). This consideration moreover seems to be appropriate due to the thoughts of the scientists and study excerpts presented so far. In this respect,

outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) of the management accounting function *information* (Mehlan 2007: 11; Tschandl 2012: 16) should be considered under the aspect of increasing quality of information supply (Gross et al. 2006: 160; Bagad 2009: 11 et seq.). At this stage, it is important to mention that outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) of the management accounting functions planning, analysis, and steering (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) have been given importance in the scientific community (Urigshardt et al. 2008: 11 et seq.). Consequently, they have been recommended for outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) for SMEs (Urigshardt et al. 2008: 11). Whether these recommendations have been followed, however, requires analysis. Thus, it makes sense to analyze the percentage of management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) that are outsourced or intended for the purpose of outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11).

Given these considerations, the conclusion is obvious that suchlike questions can only be answered with the aid of an independent study. Hence, the present study intends to investigate this question.

Before the study procedures and results are presented, it makes sense to refer to theories (Dibbern et al. 1999: 5 et seq.) that can contribute to understand the reasons for off-site management accounting (Horak 1995: 128; Pössl 1991: 60).

Thus, in the following, a selection of theories (Dibbern et al. 1999: 5 et seq.) will be highlighted.

7 THEORETICAL FOUNDATION

Highlighting scientific theories (Dibbern et al. 1999: 5 et seq.) should help provide a theoretical frame of reference to explain the need for management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.), alternatively, off-site management accounting (Horak 1995: 128; Pössl 1991: 60) in SMEs, driven by challenges such as digital transformation (Kieninger et al. 2015: 5 et seq.; Hügler et al. 2019: 53 et seq.) and issues such as enterprise insolvencies (Krause et al. 2001: 8; Peemöller 1990: 30; Staab 2015: 6 et seq.).

One of these scientific theories is that of entrepreneurship (Dibbern et al. 1999: 5 et seq.). The focus of this theory is on enterprises (Dibbern et al. 1999: 5 et seq.). The theory of entrepreneurship examines the requirements placed on managers (Dibbern et al. 1999: 5 et seq.). Moreover, the theory of entrepreneurship (Dibbern et al. 1999: 5 et seq.) offers a selection of various other theories (Dibbern et al. 1999: 5 et seq.) that can be used to support management decisions (Dibbern et al. 1999: 5 et seq).

Thus, four of these theories (Dibbern et al. 1999: 5 et seq.) are explained in more detail below. The aim is to filter out the theories (Dibbern et al. 1999: 5 et seq.) that are best suited to justify the creation of off-site management accounting (Horak 1995: 128; Pössl 1991: 60) in SMEs. In addition, it is analyzed which factors can contribute to a successful collaboration with service partners such as Business Process Outsourcers (BPOs) (Accenture 2018).

7.1 THEORY OF ENTREPRENEURSHIP AS FRAME OF REFERENCE

"There is nothing so practical as a good theory" (Lewin 1951: 169).

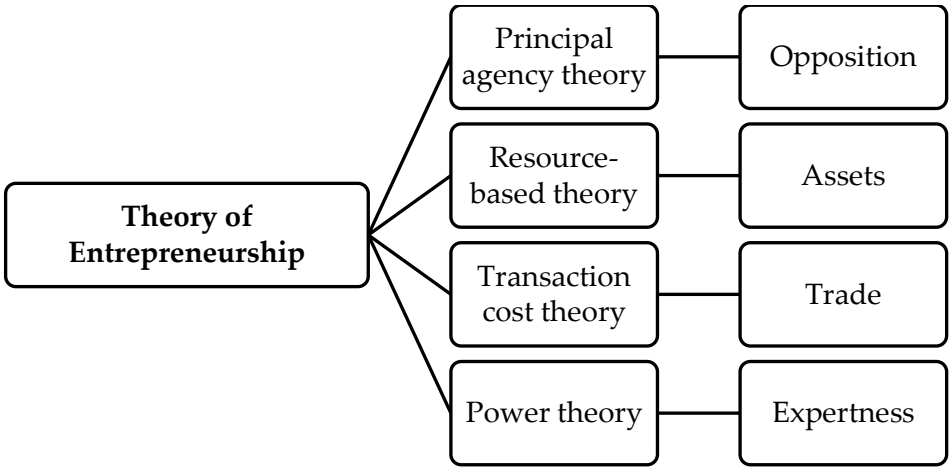
This famous phrase was proposed by Kurt Lewin (1951: 169), who developed social psychology (Lewin 1951: 169). The sentence means that problems in practice can be solved with a well-explained theory and that, consequently, there is a relationship between theory and practice (Lewin 1951: 169). Enterprises strive for

solutions methodologically and organizational concepts that are economically sustainable. For this purpose, scientific theories can provide a solid basis.

In this respect, the following theories are highlighted: Principal agency theory, resource-based theory, transaction cost theory, and power theory (Dibbern et al. 1999: 6). The theories presented are intended to contribute to setting the determinants that lead to service partners being contracted. Moreover, the theories should contribute to the formation of hypotheses (Doering et al. 2016: 407).

The different theories (Dibbern et al. 1999: 6) are illustrated with the aid of the following figure.

Figure 12: Selection of theories of entrepreneurship.



Source: Own depiction according to Dibbern et al. (1999: 6).

In this respect, the principal agency theory (Ackere 1993: 83 et seq.) will be highlighted first with the aid of the following chapter.

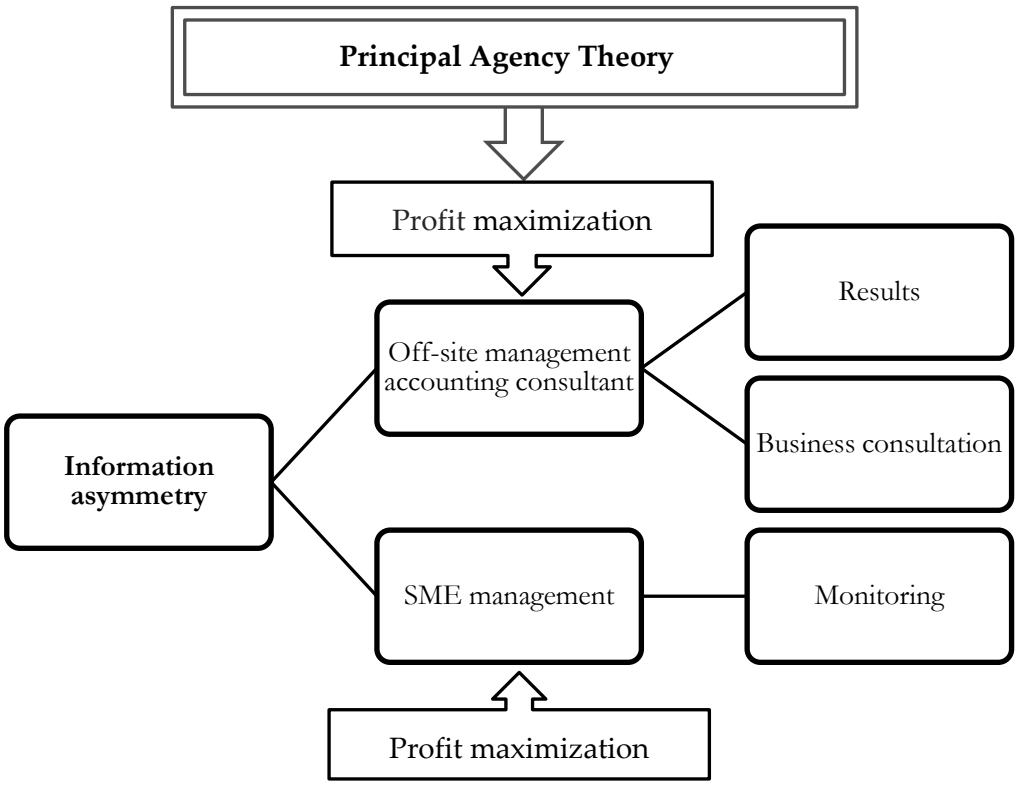
7.1.1 Principal agency theory

The principal agency theory (Ackere 1993: 83 et seq.) is a theoretical model in science that examines the collaboration between two parties, with one of the parties being named an agent and the other a principal (Ackere 1993: 83 et seq.). The collaboration between agent and principal is characterized by a contract that provides incentive regulations for the agent (Boucková 2015: 5 et seq.; Kralj 2004: 8). However, the collaboration between agent and principal is often described as

problematic since the self-interest of both parties is characterized by maximizing profits (Boucková 2015: 5 et seq.; Kralj 2004: 8). Another issue is the superiority of the agent over the enterprise manager (Dierkes et al. 2008: 19 et seq.), which is determined by that data is available to him or her much earlier than to the management of the enterprise (Dierkes et al. 2008: 19 et seq.). This leads to an information asymmetry (Dierkes et al. 2008: 19 et seq.). However, such behavior can be dangerous if the interests of the principal differ from those of the agent (Dierkes et al. 2008: 19 et seq.). Moreover, such behavior can be applied to any economic situation in the sense of the principal agency theory and thus affects enterprises, including SMEs.

The following figure illustrates the theory related to off-site management accounting (Horak 1995: 128; Pössl 1991: 60) and SME management.

Figure 13: Principal agency theory within management accounting.



Source: Own depiction according to Kralj (2004: 8).

The principal agency theory (Ackere 1993: 83 et seq.) aims at finding solutions to the three main difficulties, which are hidden action, hidden characteristics, and hidden intention as a consequence of information asymmetry and opportunistic behavior (Wenninger 2003: 15 et seq.). Incentive and control systems are proposed as a solution (Wenninger 2003: 15 et seq.). Control systems should help to monitor the agent's work performance in order to determine whether he is working according to the principal's goals (Wenninger 2003: 15 et seq.). However, such control systems can only rarely be implemented as they are associated with high costs (Wenninger 2003: 15 et seq.).

Moreover, off-site consultants (agents) (Accenture 2018) may be dissatisfied if the manager (principal) uses control systems to monitor performance (Wenninger 2003: 15 et seq.). Such difficulties can be solved in advance by a well-prepared consultancy or service agreement, which regulates a trustful collaboration and offers a good fee regulation for the service partner (agent) (Horak 1995: 128).

It can finally be stated that the scientists listed here consider an adequate supply of information to be a key factor when two parties intend to collaborate successfully (Dierkes et al. 2008: 19 et seq.; Wenninger 2003: 15 et seq). Thus, there is the need to use the principal agency theory (Dierkes et al. 2008: 19 et seq.; Wenninger 2003: 15 et seq.) for the own research since it questions criteria that are considered as reasons for outsourcing measures (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11). In conjunction with theories that can be relevant for the own research, the resource-based theory (Kühnl 2010: 62; Bucerius 2004: 18; Krause 2008: 88; Six 2012: 61) will be highlighted with the aid of the following chapter.

7.1.2 Resource-based theory

Aspects of the resource-based theory (Kühnl 2010: 62; Bucerius 2004: 18; Krause 2008: 88; Six 2012: 61) can be relevant to opt for collaboration with service partners. The resource-based approach assumes that enterprises have unique resources that help them to operate successfully in the market and improve performance (Kühnl 2010: 62; Bucerius 2004: 18; Krause 2008: 88; Six 2012: 61). According to Bucerius (2004: 18), for instance, an incentive system can also be a unique resource, even if other enterprises have similar incentive systems (Bucerius

2004: 18). In addition, stakeholders such as customers need to recognize the resources of an enterprise and consequently demand them. This can lead to high customer loyalty and even strengthen the competitive situation of enterprises like SMEs. Moreover, according to Krause (2008: 88), enterprise culture, skills, and abilities combined with the unique resources (Krause 2008: 88) of the enterprise can also contribute to strengthening the competitive situation of the enterprise (Krause 2008: 88). Scientists such as Stock and Wojciechowska (2010: 52; 2016: 20) do not differentiate resources. However, there are other representatives (Six 2012: 61; Samadi 2008: 98; Kaltenbacher 2011: 77 et seq.) of this theory who make a differentiation, and according to which, three categories can be distinguished.

Thus, the resources can be divided into categories, such as

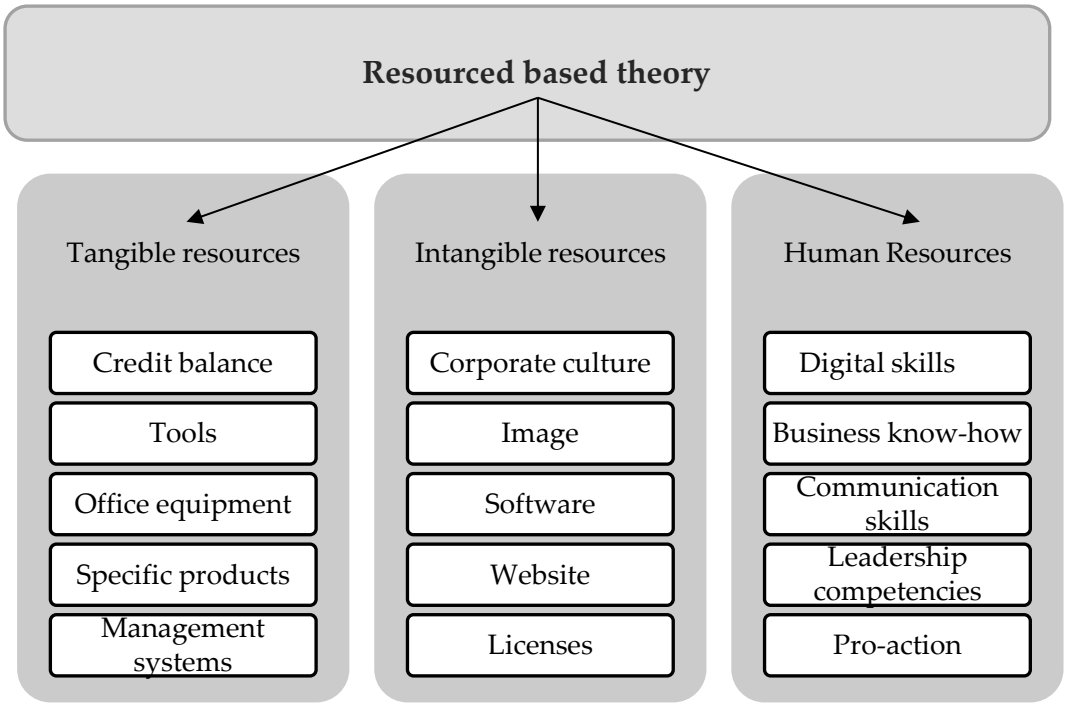
- tangible,
- intangible and
- human resources (Six 2012: 61; Samadi 2008: 98; Kaltenbacher 2011: 77 et seq.).

Tangible resources include, for instance, financial resources such as credit lines, securities, machines, equipment, and plants, while intangible resources can be characterized by technologies, patents, rights, trade secrets, and enterprise culture (Stock 2010: 52; Wojciechowska 2016: 20). According to Six (2012: 61), tangible resources can be defined by a corporate structure that involves management and hierarchical as well as spatial structures (Six 2012: 61). According to Samadi (2008: 98), tangible and intangible resources are the result of hierarchical structures and are consequently difficult to imitate (Samadi 2008: 98). Regarding the third resource, human resources (Kaltenbacher 2011: 77 et seq.), it can be stated that this resource should be classified as critical (Kaltenbacher 2011: 77 et seq.). This can be determined by that the employees are needed, for instance, for implementing strategies that make an enterprise successful (Kaltenbacher 2011: 77 et seq.). Another reason, which is considered valuable, is that employees with certain qualifications and skills are not available on the labor market indefinitely. According to Kaltenbacher (2011: 78), enterprises should recruit highly skilled staff through appropriate recruitment measures (Kaltenbacher 2011: 78) in order to gain a highly competitive advantage over other enterprises (Kaltenbacher 2011: 78). However, not only should skilled staff be recruited, but they should also be motivated to perform well (Piezonka 2013: 13; Wankel 2008: 407 et seq.). This

includes, for instance, the ability to network or to communicate well with stakeholders (Schneider 2008: 25; Wankel 2008: 407 et seq.).

The following figure therefore shows the unique resources (Wankel 2008: 407) of an enterprise, which ideally should exist in SMEs.

Figure 14: Ideal unique resources.



Source: Own depiction according to Wankel (2008: 407).

It can be summarized that the views of both Kaltenbacher (2011: 78) and Piezonka (2013:13) are important for the own study since, in addition to the deficits of application-based resources, the level of competence deficits (Gleich et al. 2016: 73 et seq.; Kaltenbacher 2011: 78; Piezonka 2013: 13) in management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) will be analyzed.

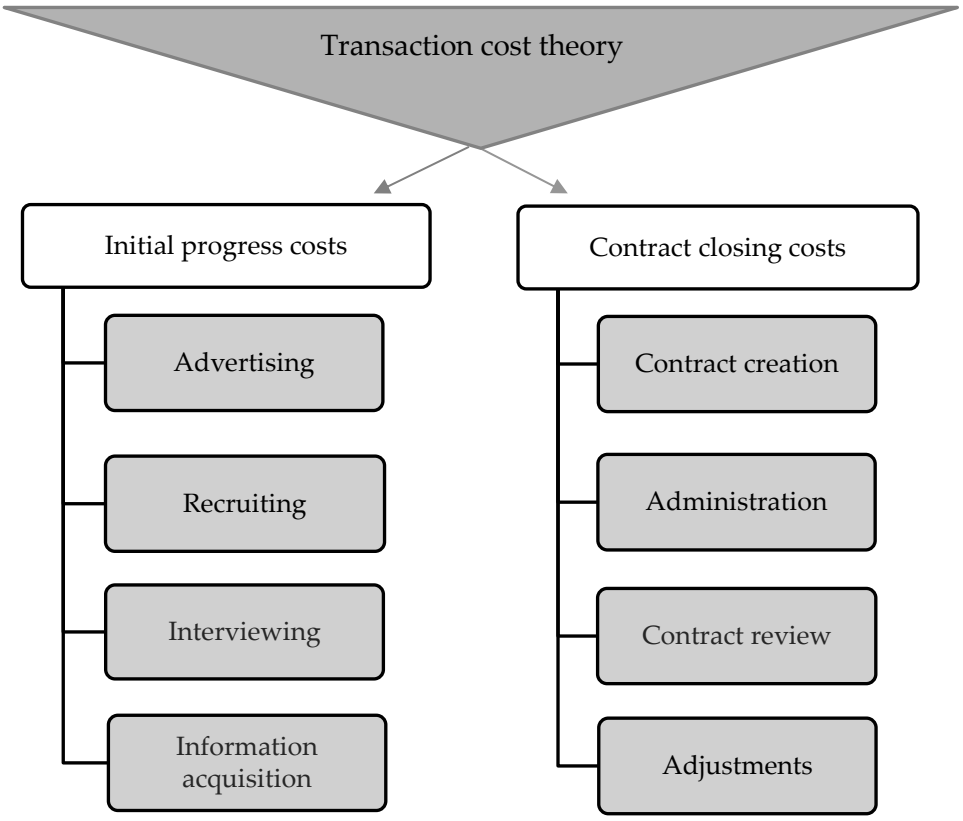
In view of the own study, it makes sense to analyze the theory of transaction costs (Liebhart 2001: 79), as the topic of transaction costs (Liebhart 2001: 79) can be important when it comes to working with service partners (Accenture 2018) such as Business Process Outsourcers (BPO) (Accenture 2018). Thus, the following chapter deals with the transaction cost theory (Liebhart 2001: 79).

7.1.3 Transaction cost theory

With help of the transaction cost theory (Liebhart 2001: 79), it is intended to show that transaction costs (Liebhart 2001: 79) are always closely related to products or services provided by business partners (Liebhart 2001: 79). Thus, whenever products or services are provided, initial progress, agreement, monitoring, and observation are required (Liebhart 2001: 79). Moreover, products or services require adjustments, and as a consequence, all of this contributes to transaction costs (Liebhart 2001: 79). Adjustments may be required, for instance, due to market or legislative changes (Zielke et al. 2012: 112 et seq.). Hence, transaction costs can be divided according to two main criteria, which include the following (Jänchen 2008: 14; Felden et al. 2019: 107 et seq.): Costs for initial progress (Jänchen 2008: 104) and contract closing costs (Jänchen 2008: 104). The initial progress costs include, for instance, costs for the search for a service partner (Jänchen 2008: 104; Felden et al. 107 et seq.), while contract closing costs (Jänchen 2008: 104) include costs for an expert who is familiar with the formulation of agreements in view of collaborative partnerships (Jänchen 2008: 14; Felden et al. 2019: 107 et seq.).

The following figure briefly summarizes the most important transaction costs that occur in business relationships (Felden et al. 2019: 107 et seg.).

Figure 15: Transaction costs in business relationships.



Source: Own depiction according to Felden et al. (2019: 107 et seq.).

However, the term transaction cost comprises much more than that. It involves incomplete information (Fließ 2001: 269) that contributes to gaps that need to be closed (Fließ 2001: 269). Closing these gaps leads to the transaction costs mentioned above (Fließ 2001: 269). As consequence, it seems useful to analyze the costs. The amount of transaction costs (Kocian 1999: 39; Fließ 2001: 269) depends on factors such as disagreements (Kocian 1999: 39; Fließ 2001: 269).

These factors are influenced by conditions such as the economic struggle of market participants and the number of partners seeking a transaction (Kocian 1999: 39).

Zielke et al. (2012: 113) view the reasons for the transaction costs as similar to those of Fließ (2001: 269) and go even further by adding the following (Zielke et al. 2012: 113):

- Transaction costs are influenced by the environment
- Transaction costs depend on decisions made by human beings.

Taking into account both components, the word *transaction costs* (Jänchen 2008: 14; Felden et al. 2019: 107 et seq.) can be briefly described as follows: *Transaction costs* (Jänchen 2008: 14; Felden et al. 2019: 107 et seq.) are costs that arise from the settlement of a transaction (Liebhart 2001: 79). This includes the negotiation with the service partner regarding quality, pricing, terms of payment, and services (Jänchen 2008: 14; Felden et al. 2019: 107 et seq.).

In this respect, however, it would be useful to know which assumptions are supported by the transaction cost theory (Liebhart 2001: 79) and by which characteristics they can be moored. This will be explained below from various perspectives. Zielke et al. (2012: 113) addresses this theory by stating that humans have bounded rationality and behave opportunistically (Zielke et al. 2012: 113).

Looking at the assumptions of bounded rationality, it can be realized that this behavior can be characterized by that human beings cannot choose the most suitable one from the variety of options (Zielke et al. 2012: 113). Moreover, bounded rationality can be characterized by uncertainty, which is evidenced by the fact that contractors are supervised for their behavior, which in turn causes costs (Zielke et al. 2012: 113). Other scientists assume that bounded rationality contributes to poor agreements, which in turn leads to opportunistic behavior as each contractor tries to enforce his own interests (Schauwecker 2011: 5). However, this opportunistic behavior is often interpreted negatively in the scientific literature, where it is associated with insincerity and dishonesty.

Thus, it would make sense to change this behavior into behavior that creates a win-win situation for both sides. A closer look reveals that opportunism is a result of bounded rationality (Zielke et al. 2012: 113).

As mentioned above, opportunism can be characterized by human beings acting in their own interest and being concerned about their own well-being (Schauwecker 2011: 5). This, however, needs to be solved (Gaugler 2000: 59). One

such solution could be the creation of contracts that provide for a reward (Gaugler 2000: 59).

The second way out of this problem could be to monitor the behavior of the contractor (Gaugler 2000: 59). This approach would help to abolish opportunistic behavior and achieve the desired goal (Buriánek 2009: 75).

However, there are other scientists like Williamson (1975: 26) who look at opportunistic behavior and bounded rationality from a different perspective. Williamson (1975: 26) emphasizes that transaction costs are the result of bounded rationality, which in turn leads to incomplete contracts (Williamson 1975: 26). He assumes that such circumstances would be insignificant if both parties trusted each other (Williamson 1975: 26).

Nevertheless, the reality is different, and – in most cases – both parties behave opportunistically (Williamson 1981: 554). Williamson (1981: 554) also refers to his assumptions on three specific factors that determine costs. The factors are the frequency, the asset specificity, and the uncertainty (Williamson 1990: 142), whereas the frequency is related to the regularity of the transactions carried out, asset specificity to the specificity of intangible and tangible goods, and uncertainty to the uncertainty of transactions (Williamson 1990: 142).

In the following, the factors asset specificity and uncertainty (Williamson 1990: 142) are considered, as both factors are more closely related to the research topic. Williamson (1990: 142) refers to asset specificity by stating that unique assets can only develop in their familiar environment (Williamson 1990: 142).

Subsequently, it is decided on account of asset specificity (Williamson 1990: 142) whether to opt for or against the collaboration with service partners who are engaged in management accounting (Williamson 1990: 142).

Although transaction costs (Jänchen 2008: 14; Felden et al. 2019: 107 et seq.) are the central object of investigation of this theory, Williamson (1990: 142) emphasizes the importance of production costs also within this theoretical construct and hence considers them within asset specificity (Williamson 1990: 142). Williamson assumes that the production cost advantages of off-site sourcing decrease with increasing specification (Williamson 1981: 560). Moreover, he assumes that the advantages of off-site sourcing decrease with increasing factor

specificity and then turn into disadvantages in transaction costs (Williamson 1981: 560).

The second point regarding uncertainty relates to behavioral uncertainty and includes uncertainty regarding the behavior of service partners, which is difficult to predict in advance due to the environmental circumstances mentioned above (Hayek 1945: 524). In connection with contracting service partners, it should therefore be noted that uncertainty can play an important role. However, these two behavioral assumptions are not the only ones that should be considered. The third behavioral assumption is that of risk neutrality (Hanslik 2012: 22). Compared to the other two, less attention is paid to the assumption of risk neutrality (Hanslik 2012: 22). Nevertheless, the third behavioral assumption is briefly considered for reasons of understanding.

Risk neutrality means that market participants regard risky options as equivalent as long as the expected value is the same (Hanslik 2012: 22). Thus, the market participants do not classify the options as dangerous or harmless and, as a consequence, are neutral regarding the issue (Hanslik 2012: 22).

This theory would imply that if transaction costs (Jänchen 2008: 14; Felden et al. 2019: 107 et seq.) in the market were higher, SMEs should offer the services and products themselves (Hanslik 2012: 22). Conversely, where internal transaction costs (Jänchen 2008: 14; Felden et al. 2019: 107 et seq.) are higher than external costs, enterprises like SMEs should refer to service partners (Hanslik 2012: 22). However, it is questionable whether this theoretical approach can always be applied. Moreover, the transaction cost theory (Jänchen 2008: 14; Felden et al. 2019: 107 et seq.) includes additional approaches. This refers to costs incurred before or after the conclusion of the contract. This concerns ex-ante and ex-post costs (Wagner 2004: 49; Pérez 2008: 132; Dietrich 2007: 80 et seq.). Ex-ante costs are incurred before the contract is signed, whereas ex-post costs are incurred after the contract is signed (Wagner 2004: 49; Pérez 2008: 132; Dietrich 2007: 80 et seq.).

Moreover, ex-ante costs include costs of searching, evaluation, and contract agreement, whereas ex-post costs include costs of execution and termination of contracts (Wagner 2004: 49; Pérez 2008: 132; Dietrich 2007: 80 et seq.). However, ex-ante and ex-post costs may not always have been actual costs. Ex-ante costs may, for instance, include costs for negotiation, whereas ex-post costs could be, for

instance, incurred for quality control (Wagner 2004: 49; Pérez 2008: 132; Dietrich 2007: 80 et seq.).

In summary, the present research considers the critical role of transaction costs (Jänchen 2008: 14; Felden et al. 2019: 107 et seq.). It is examined which transactions are successful or unsuccessful. In this respect, it can be stated that transactions are efficient (Wagner 2004: 49; Pérez 2008: 132; Dietrich 2007: 80 et seq.) if the actors choose an organizational form that has the lowest transaction costs (Wagner 2004: 49; Pérez 2008: 132; Dietrich 2007: 80 et seq.). Moreover, it is a question of which requirements are to be considered and optimized in advance and to what extent employees can contribute to achieving strategic competitive advantages for an enterprise, including SMEs.

In connection with answering the research question, this theory is considered from the perspective of view of quality, pricing, and services (Wagner 2004: 49; Pérez 2008: 132; Dietrich 2007: 80 et seq.) provided by service partners as well as the detectable risks (Wagner 2004: 49; Pérez 2008: 132; Dietrich 2007: 80 et seq.). It is therefore well-suited for SMEs as they can decide or adapt the best organizational form for management accounting. In this conjunction, the fourth theory, which is about the power theory (Schuhmacher 2005: 161; Schneider 2006: 154), will also be highlighted with the aid of the next chapter, as it can contribute to identifying risks when collaborating with service partners.

7.1.4 Power Theory

Analyzing the power theory (Schuhmacher 2005: 161; Schneider 2006: 154) can help to opt for or against the outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) of management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.).

The goal of the power theory (Schuhmacher 2005: 161; Schneider 2006: 154) is to evoke the same kind of thinking and acting with the other person (Schuhmacher 2005: 161; Schneider 2006: 154). In principle, the power theory deals with the power relations within organizations or between people.

The topic of power can be important when enterprises intend to collaborate with service partners. This can lead to insecurity and dissatisfaction (Schuhmacher 2005: 161; Donaldson 2001: 153) among the in-house employees as it is to be

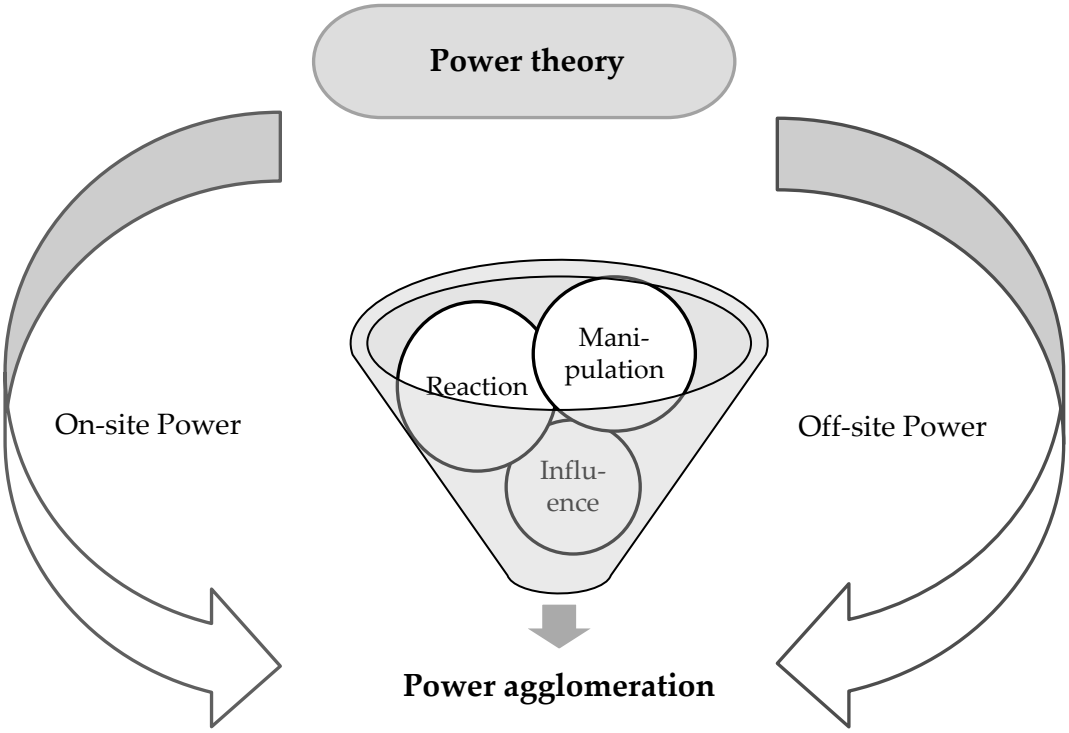
expected that the department concerned intends to hold its very well-situated status (Schuhmacher 2005: 161; Donaldson 2001: 153) and, as a result, disagrees with such ideas (Schuhmacher 2005: 161; Donaldson 2001: 153). However, power is the ability to influence relationships within organizations and between people, and therefore, no one-sided, or negative approach should be considered (Weinberger 1991: 124; Sieloff 2007: 196 et seq.). Power includes the ability to act proactively and achieve goals that can contribute to positive results (Weinberger 1991: 124; Sieloff 2007: 196 et seq.).

Furthermore, power can also be regarded as an advisory process (Weinberger 1991: 124) whose goal is to have an effect on other people's mindset and behavior (Weinberger 1991: 124). Consequently, such considerations show that individuals and groups are aware of their position of power and consciously use their power. This involves, for instance, interaction with people or within the organization since goals can only be achieved through collaboration (Atack 2012: 104). Moreover, power can help implement projects and contract service partners, as may be the case with Business Process Outsourcers (BPOs) (Accenture 2018), who can contribute to a positive business outcome.

However, power should not be used to bring the other party or organization into complete dependence since this behavior, if still intentional, is more likely to cause harm. It should rather serve as a trigger that produces positive effects for both sides since only then can both be helped, even if the theory is basically aimed at social relationships in which one party is to be brought into a relationship of dependence by the other. In this respect, strong relationships of dependence should be avoided in advance so that neither contractors nor enterprise management can be harmed.

The following figure should contribute to an understanding that power can basically be regarded as the accumulation of different forces.

Figure 16: Power agglomeration.



Source: Own depiction according to Sieloff (2007: 210).

The explanations show that power relations (Sieloff 2007: 210) are a decisive factor when it comes to collaborating with service partners. Schuhmacher (2005: 161) can serve as an example for this statement. Schuhmacher (2005: 161) shows how important the exercise of power can be within enterprises and consequently also in organizational units. Schuhmacher's (2005: 161) perspective is important for the own study as it provides the basis for the analysis of the power of management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) of the surveyed SMEs.

7.2 HYPOTHESES

Based on the argumentations shown in the scientific literature, the following hypotheses are derived and tested. The results are shown in Chapter 9.2:

H1: The stronger the specification of application-based resources in management accounting, the greater the strategic importance of management accounting will be.

H2: The higher the number of employees in the enterprise, the greater the willingness to outsource management accounting.

H3: The higher the assessment of the strategic importance of management accounting, the higher the outsourcing intentions will be.

H4: If long-term planning is carried out instead of short- to medium-term planning, the willingness to outsource management accounting is higher.

H5: If the management accounting functions are performed by the managing director/owner himself, the willingness to outsource management accounting is lower.

H6: The higher the cost efficiency of outsourcing of management accounting compared to on-site management accounting, the greater the willingness to outsource management accounting.

8 RESEARCH DESIGN

The basis of all research is the research design (Stein 2014: 135 et seq.). The research design contributes to determining the empirical research method (Stein 2014: 135 et seq.). The methods of empirical research in this respect include surveys, observations, experiments, or group discussions (Stein 2014: 135 et seq.). For the present project, an online questionnaire (Stein 2014: 135 et seq.) was selected as the quantitative research method (Stein 2014: 135 et seq.; Doering et al. 2016: 412). This empirical research method was intended to test the hypotheses (Doering et al. 2016: 407). There are some reasons for choosing this empirical research method, as it offers various advantages (Stein 2014: 135 et seq.), which will be discussed hereinafter.

The aim of this chapter is therefore to first highlight the advantages (Stein 2014: 135 et seq.) of online surveys and subsequently to draw research-guiding conclusions. Afterward, the quantitative research (Doering et al. 2016: 412) is shown to be helped by related subchapters such as response curve, response rate, response statistics, and survey methods (Doering et al. 2016: 412). The chapter on research design concludes with the topic of planning and conducting the quantitative research (Doering et al. 2016: 412) carried out. However, before highlighting the advantages (Stein 2014: 135 et seq.), it should be mentioned that the empirical method (Stein 2014: 135 et seq.) chosen also has disadvantages (Stein 2014: 135 et seq.), however, since the advantages outweigh the disadvantages, the advantages are discussed below (Stein 2014: 135 et seq.). One of the advantages is that the survey can be conducted at any time and any place (Stein 2014: 135 et seq.). This can lead to a high quantitative range (Stein 2014: 135 et seq). The range (Stein 2014: 135 et seq.) indicates how many participants took an interest in the survey within a certain period of time (Stein 2014: 135 et seq.). Participants can also choose when to fill in the questionnaire. Furthermore, online surveys offer the advantage that they are less expensive and more time-efficient than other methods (Wagner et al. 2014: 661 et seq.). Regarding the research design, a cross-sectional design (Stein 2014: 135 et seq.) was chosen. Thus, this empirical study aims to obtain

unique opinions (Stein 2014: 135 et seq.) on the creation of off-site management accounting (Horak 1995: 128; Pössl 1991: 60).

8.1 RESEARCH-GUIDING CONCLUSIONS

The deductive approach (Doering et. 2016: 35) was chosen as the research approach for the present project. When considering the reasons for off-site management accounting (Horak 1995: 128; Pössl 1991: 60), it becomes apparent that off-site management accounting (Horak 1995: 128; Pössl 1991: 60) can be a means to meet the expectations of stakeholders and to safeguard the survival of an enterprise. Due to technological changes, customer expectations, and entrepreneurial projects – this is made clear by the digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) – the importance of sustainability as a means of achieving enterprise goals is growing. This basically means that a lack of management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149) or off-site management accounting (Klett et al. 2010: 6; Euler Hermes 2006) can cause negative reactions in society, the policy, and practice, thus questioning the sustainability of enterprises such as an SME.

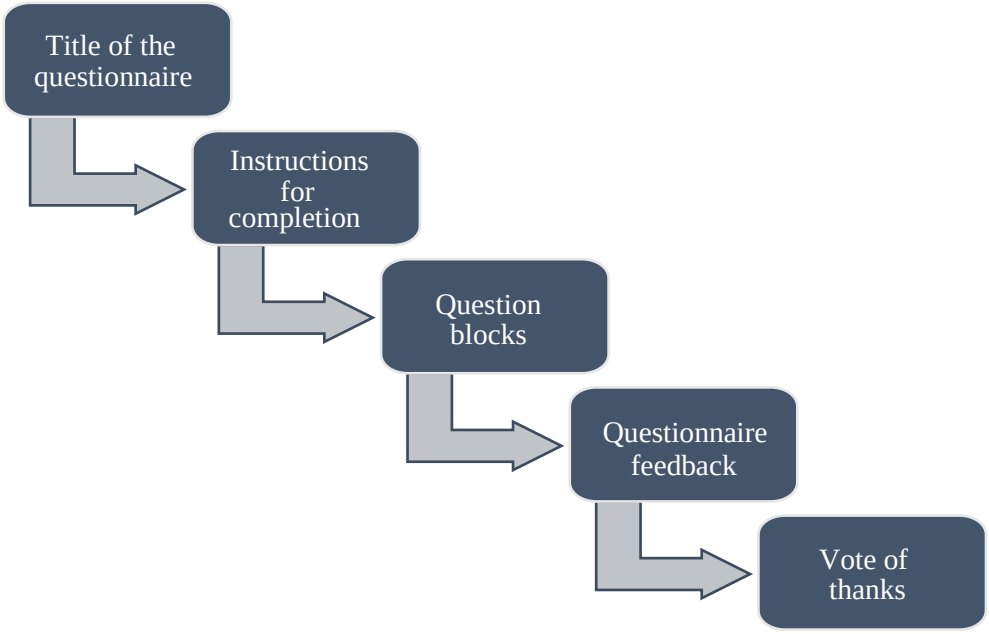
However, sustainability is decisive to the overall objective of investor relations and the long-term maximization of enterprise profits, otherwise, stakeholders may terminate their collaboration with SMEs. Thus, suchlike considerations require an analysis.

8.2 QUANTITATIVE RESEARCH

A standardized questionnaire (Doering et al. 2016: 405) was used to conduct quantitative research (Schnell et al. 2013: 315). The participants received a questionnaire with pre-formulated answers. Thus, they had the possibility to choose the most appropriate answer in view of the hypotheses (Doering et. 2016: 404). A standardized questionnaire (Doering et al. 2016: 405) can be characterized by that all survey participants receive the same questions in the same order (Doering et al. 2016: 405). Furthermore, the form (Doering et al. 2016: 405) of the standardized questionnaire (Doering et al. 2016: 405) also plays an important role in quantitative studies (Schnell et al. 2013: 315), which are based on numerical data (Doering et al. 2016: 405).

Thus, the questionnaire was previously entirely tested in a pre-test (Doering et al. 2016: 405). This provided the opportunity to make adjustments (Doering et al. 2016: 405). Moreover, there are general requirements for a standardized questionnaire, which should be followed as far as possible. One of these requirements is the rule that a questionnaire should consist of the following content (Doering et al. 2016: 405 et seq.).

Figure 17: Content of the questionnaire.



Source: Own depiction according to Doering et al. (2016: 406).

In addition, indicators (Doering et al. 2016: 407) were listed within the questions that measure the variables (Doering et al. 2016: 407) according to the research question as well as hypotheses (Doering et al. 2016: 407). The questions were asked according to thematic blocks (Doering et al. 2016: 407). Care was also taken to ensure that simple questions were asked at the beginning, followed by more specific questions so that the interviewee could gradually adjust to the level of difficulty (Doering et al. 2016: 407). Moreover, when preparing the questionnaire, attention was paid to ensuring that the questions relate to the hypotheses (Doering et al. 2016: 409).

Moreover, care was taken to formulate precise questions, and not to use words with multiple meanings, foreign words, and complicated sentence structures (Doering et al. 2016: 407). In order to safeguard the interest of the participants (Doering et al. 2016: 410 et seq.), the standardized questionnaire (Doering et al. 2016: 410 et seq.) was tested regarding its scope in advance with help of a pre-test (Doering et al. 2016: 410 et seq.). In general, the aim of the pre-test is to identify difficulties or gaps (Doering et al. 2016: 410 et seq.).

In this respect, a small group of SME managers was selected to fill in the standardized questionnaire and then give recommendations regarding readability (Doering et al. 2016: 410 et seq.). Moreover, SMEs were classified according to enterprise size in advance. This enables comparisons to be made. The survey was also conducted as a random sample survey (Doering et al. 2016: 294 et seq.). The aim of the sampling was to draw conclusions about SMEs in general (Doering et al. 2016: 294 et seq.). Another important criterion in scientific studies is the questionnaire response (Doering et al. 2016: 412), which consists of the response curve, response rate, and response statistics (Doering et al. 2016: 412), which are also taken into account in this study (Doering et al. 2016: 412). In the following, the three criteria will briefly be explained.

8.2.1 Response curve

The response curve indicates how many questionnaires were answered within a certain time (Doering et al. 2016: 412). In this respect, experience shows that participants respond more quickly when standardized online questionnaires are used compared to other survey methods (Doering et al. 2016: 412). However, if the response curve weakens after, for instance, 10 days (Doering et al. 2016: 412), it would be useful to contact the target SMEs that did not respond to the first mailing again. Thus, it was intended to follow this procedure within this study.

8.2.2 Response rate

The response rate is the share of questionnaires sent out in a postal or online survey that were returned within a specified time interval (Doering et al. 2016: 412). A low response rate characterizes the non-response problem (Doering et al. 2016: 412). However, the response rate (Doering et al. 2016: 412) can be increased by

follow-up actions. Within a research study, it is useful to specify the participation rate (Doering et al. 2016: 412) used to evaluate the quantitative study and its sample (Doering et al. 2016: 412). It was therefore intended to follow these recommendations within this study. Compliance with these guidelines resulted in a response rate of 16.5 percent.

8.2.3 Response statistics

The characteristics of those who answered the questionnaire and those who have not can be generally analyzed by statistical analyses (Doering et al. 2016: 412). Doering et al. assume that the absence of an answer does not distort the conclusions drawn from the comparison (Doering et al. 2016: 412). As the study has a different purpose, it was not intended to follow this recommendation.

8.2.4 Survey methods

When scientific surveys are conducted, the question often arises as to which way to conduct a survey. There are different alternatives, and the choice of one of these possibilities depends on the objective to be achieved (Atteslander 2010: 158 et seq.). There are, for instance, telephone interviews, the Delphi method, or written interviews (Atteslander 2010: 158 et seg.). Certainly, there are many more alternatives, however, in the following, these three possibilities are briefly presented to limit the complexity of this topic.

8.2.4.1 Telephone interviews

Telephone interviews have the advantage that the participants can be reached by telephone almost all day long (Hüfken 2014: 631 et seq.), however, show disadvantages, such as that the participants cannot afford to spend time thinking about answers (Hüfken 2014: 631 et seq.).

8.2.4.2 Delphi method

The Delphi method is characterized by a written expert survey that is carried out several times (Häder et al. 2014: 587; Atteslander 2010: 164; Doering et al. 2016: 400 et seq.). It addresses issues that lie in the future and which should be answered by experts (Häder et al. 2014: 587; Atteslander 2010: 164; Doering et al. 2016: 420).

In this method, the answers are openly presented among all experts to review their own answers again (Häder et al. 2014: 587; Doering et al. 2016: 420).

8.2.4.3 Written interviews

With this method, questionnaires are usually sent by post to the selected persons (Atteslander 2010: 157; Reuband 2014: 643; Schnell et al. 2013: 350; Doering et al. 2016: 405 et seq.). The persons are politely asked to fill in the questionnaire. This allows potential participants to read the questionnaire without time pressure and to take their time to answer the questions. This method has advantages, including lower costs compared to other methods (Atteslander 2010: 157; Reuband 2014: 643; Schnell et al. 2013: 350). Moreover, since the interviewer is not personally present at the interview, the range of participants is correspondingly large (Atteslander 2010: 157).

Within the framework of written surveys, there is the possibility of conducting an online survey. This possibility is used in this study (Atteslander 2010: 166; Wagner et al. 2014: 661 et seq.). In the following, there is a brief explanation of the choice of this option (Atteslander 2010: 166) and the reasons for its choice and its advantages (Atteslander 2010: 166).

8.2.4.4 Online survey as a special form of written interviews

An online survey (Atteslander 2010: 166) offers the possibility that the questionnaire can be downloaded and sent back with help of the email account after it has been answered (Atteslander 2010: 166; Wagner et al. 2014: 661 et seq.). Online surveys offer various advantages such as answering questions directly on the computer and a fast response time (Atteslander 2010: 166). In this respect, participants have the opportunity to take their time to read the questions and hence do not have to answer immediately. Another important aspect is the moderate cost of this special type of survey (Atteslander 2010: 66).

8.2.5 Planning, execution, and evaluation of the quantitative research

The procedures recommended (Doering et al. 2016: 412; Atteslander 2010: 166) in the previous chapters have been taken into account, and thus, the study has been organized and conducted as follows:

8.2.5.1 Pre-test of the interview guideline

A pre-test (Kaiser 2014: 70) was carried out in advance to make necessary adjustments within the standardized questionnaire in view of duration, comprehensibility, and usefulness in answering the research questions.

The pre-test (Kaiser 2014: 70) was carried out with the aid of some SME entrepreneurs who are familiar with surveys (Kaiser 2014: 70). Subsequently, the standardized questionnaire (Kaiser 2014: 70) was designed according to the results of the pre-test (Kaiser 2014: 70), including feedback from the managers (Kaiser 2014: 70).

The online survey (Atteslander 2010: 166) was carried out using software specified for online surveys (Atteslander 2010: 166), taking into account all necessary requirements. The software for the planned online survey was selected beforehand according to previously defined criteria. Factors such as pull-down menus, display of interim results, or drag-and-drop tasks were used as criteria for selecting the appropriate survey server (Doering et al. 2016: 414 et seq.). Furthermore, the research was carried out on account of a sampling (Doering et al. 2016: 414 et seq.). For this purpose, SMEs were contacted, which had previously been grouped according to enterprise size. The results of 220 SMEs are thus available. To motivate a large number of participants, an informative and motivating cover letter and a reminder were prepared. It was planned to make the questionnaire available over a period of almost 4 to 6 weeks. This was followed up quite well so that the online survey was successfully conducted in February and March 2019.

In addition, the recommendation of Doering et al. (2016: 415) regarding the time limit for answering, which should be about 15 to 20 minutes (Doering et al. 2016: 415), was kept to ensure readiness to answer the questionnaire (Doering et al. 2016: 415). The standardized questionnaire was then sent via the Internet to the participants, who were selected in advance according to certain criteria such as enterprise size, branch, and their professional function within the enterprise. Regarding professional functions, it can be stated that the participants consisted of managing directors/owners, commercial directors, team leaders in management accounting, and management accounting employees. In view of the branch, it can be stated that the participants are active in various branches such as construction, manufacturing, agriculture and forestry, trade, financing and leasing, and other

industries. Furthermore, the online survey was conducted throughout Germany. This ensured a good range.

After completion of the study, the answers were systemically stored on an Internet server for subsequent analysis (Wagner et al. 2014: 663).

8.2.5.2 Data evaluation

As mentioned above, the questionnaire consisted of closed questions. Rating scales (Doering et al. 2016: 245 et seq.) were established to answer the questions. According to Doering et al. (2016: 269), one way of defining a scale is the Likert scale (Doering et al. 2016: 269). The Likert scale is a psychometric scale (Keimer et al. 2020: 62 et seq.) used to evaluate certain characteristics (Doering et al. 2016: 269) to obtain the interviewee's points of view (Doering et al. 2016: 269) on the content of a question (Doering et al. 2016: 269).

A 5-step scale or a 7-step scale can be used (Keimer et al. 2020: 62 et seq.). First, a 5-step scale is shown as an example. The following formulations can be used which were previously numerically coded (Doering et al. 2016: 585 et seq.). However, the answers should not be regarded as conclusive and should therefore be considered as an option.

1. Completely agree on
2. I rather agree
3. Partially agree
4. Disagree
5. Not at all agree

A 7-step Likert scale could look like the following (Keimer et al. 2020: 62 et seq.): 0 - *very low* to 6 - *very high*. In the present study, a 5-step Likert scale was used (Keimer et al. 2020: 62 et seq.).

Furthermore, the present study was based on a descriptive-explanatory research design (Doering et al. 2016: 415). This is a step before testing the alternative hypotheses using inferential statistics (Holling et al. 2011: 33). Descriptive statistics (Holling et al. 2011: 33; Doering et al. 2016: 415) should provide information on the results of the sample (220 SMEs), which means that only the property of the sample is described (Doering et al. 2016: 415). No statements can be made about the population if only descriptive statistics are used (Holling et al. 2011: 33). The

following questions arise in this respect as examples: Which management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) were outsourced by the surveyed SMEs, or who mainly carries out management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) within the enterprise?

However, the goal was to classify the population with the aid of the sample. Consequently, the descriptive analyses are followed by inferential statistics (Holling et al. 2011: 33). Based on the data collected, inferences (conclusions) can be drawn for very large groups (Holling et al. 2011: 33). Moreover, probability statements can be made about the views of the population (Holling et al. 2011: 33). In this respect, hypotheses are tested within the framework of inferential statistics using correlation measures (Israel 2008: 111). Correlation measures are used to measure relationships between variables (Israel 2008: 111). There are different correlation measures within science. For the present study, the correlation coefficient Kendall tau-b with its significance test is used (Muth 2006: 447). The reason for using Kendall tau-b as a correlation coefficient is that ordinal scales can be used for variables (Muth 2006: 447). Ordinal scales order variables according to their value/characteristics (Peterson 2005: 65). Moreover, ordinal scales (Bacher et al. 2010: 183 et seq.) are used when there is a hierarchy between the variables (Bacher et al. 2010: 183 et seq.), more precisely, when one variable is dependent on the other variable (Bacher et al. 2010: 183 et seq.). These conditions apply to the intended inference statistic as shown in Chapter 9.

Moreover, Kendall tau-b (Eckstein 2006: 188; Brosius 2013: 438) was used as it is based on the counting (Eckstein 2006: 188; Brosius 2013: 438) of the amount of concordant and discordant data match (Eckstein 2006: 188; Brosius 2013: 438). The meaning of concordant and discordant is explained in more detail below. In the procedure for calculating concordant and discordant pairs, the classifications of two variables, for instance, x and y, are compared for the same two elements (Eckstein 2006: 188; Brosius 2013: 438). If the pairs are concurrent (Brosius 2013: 438), they are considered as concordant (Brosius 2013: 438). In such a case, for example, for both x and y, Element 1 is rated higher than Element 2 (Eckstein 2006: 188; Brosius 2013: 438). If the direction of classification is not the same, the pair is defined as discordant (Brosius 2013 438). In this case, for example, for x, Element 1

is valued higher than Element 2, while for y, Element 1 is valued lower than Element 2, as a logical conclusion (Eckstein 2006: 188; Brosius 2013: 438).

In summary, concordant pairs are equal in ranking and thus show a positive relationship or correlation, while discordant pairs are not equal in ranking and thus have a negative relationship or correlation (Brosius 2013: 438). In this respect, the value range for correlation coefficients such as Kendall tau-b lies between -1 to +1 (Brosius 2013: 438). Here -1 indicates a strong negative correlation (Brosius 2013: 438), while +1 indicates a strong positive correlation (Brosius 2013: 438) between the pairs (Brosius 2013: 438).

A value of 0 indicates no correlation (Muth 2006: 447). The correlation coefficient Kendall tau-b is defined as follows (Brosius 2013: 438). The following formula can be used to calculate Kendall tau-b (Brosius 2013: 438).

Formula 1: Kendall's Tau-b

$$\hat{\tau}_b = \frac{c - d}{\sqrt{(c + d + x_y) \cdot (c + d + v_y)}}$$

c = the number of concordant pairs,
d = the number of discordant pairs,
v_x = the number of bound ties in variable x,
v_y = the number of bound ties in variable y (Brosius 2013: 438).

The result of the significance test (Doering et al. 2016: 660) is the probability that the sample statistics deviate from the expected population parameter, or more precisely, that they deviate from the alternative hypothesis by the amount found (Doering et al. 2016: 680). In doing so, the expected population parameter is characterized as a null hypothesis (H0) (Doering et al. 2016: 660). The null hypothesis states that there is no equivalence relation to the population (Doering et al. 2016; 660), while the alternative hypothesis (H1) states that there is a relation to the population (Doering et al. 2016: 660). The result of the significance test (Doering et al. 2016: 664) is defined as the p-value (Doering et al. 2016: 664); more precisely, it is the probability error value (Doering et al. 2016: 664). The p-value can have any value between 0 and 1 (Anderson et al. 2007: 298). In order to falsify or verify the null hypothesis (H0) (Doering et al. 2016: 617), a significance level (α) should be defined beforehand (Doering et al. 2016: 617). According to science, in

most cases, a significance level of 0.05 (5 percent) is defined as the significance level (Doering et al. 2016: 665).

The following applies: the more the value falls below the given significance level (α), the more significant the result is, and thus the more likely the null hypothesis H (H0) is rejected (Doering et al. 2016: 665). Consequently, the alternative hypothesis (H1) can be retained. Results with a very small p-value (Doering et al. 2016: 665) can be regarded as significant (Doering et al. 2016: 665). Thus, the term significant means that a result is statistically important (Doering et al. 2016: 665).

Regarding the present study, the following three levels (Doering et al. 2016: 665 et seq.) are practiced, which are usually used in statistics (Doering et al. 2016: 665 et seq.):

- $p \leq 0.05$ Significant (error probability of less than 5 percent)
- $p \leq 0.01$ Very significant (error probability of less than 1 percent)
- $p \leq 0.001$ Highly significant (error probability of less than 0.1 percent)

9 RESULTS OF THE EMPIRICAL STUDY

In order to answer the research question formulated in Chapter 1.1, which is about analyzing the reasons that justify off-site management accounting and assessing the status quo of management accounting within SMEs and testing the hypotheses formulated in Chapter 7.2, two statistical procedures were carried out as follows:

1. Descriptive statistics
2. Inference statistics

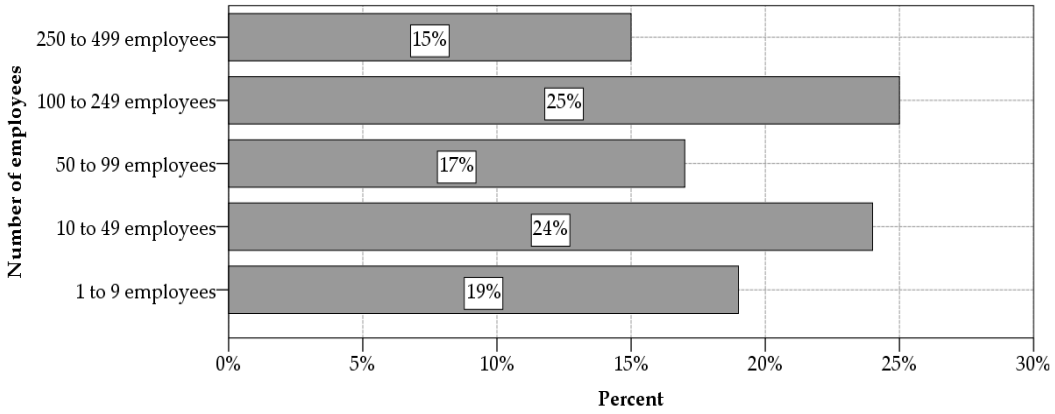
The topic in Chapter 9.1 is the presentation of the surveyed SMEs on account of their information about the enterprise and the assessment of the status quo of management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.). Moreover, it is about analyzing the reasons that justify off-site management accounting (Horak 1995: 128; Pössl 1991: 60) to answer the research question posed in Chapter 1.1. The testing of the hypotheses is shown in Chapter 9.2. In this respect, the possibility of multiple-choice was provided to some questions. In connection with the graphics presented, it is pointed out that values below three percent are not marked on the graph, with a few exceptions, which are due to the nature of the question.

9.1 RESULTS OF THE DESCRIPTIVE STATISTICS

As mentioned in the previous chapter, the empirical results will be shown hereinafter. Thus, Figure 9-1 shows the number of employees (IFM 2017). The following question was used to classify the enterprises surveyed as SME and to make comparisons based on enterprise size. Moreover, the number of employees was analyzed in relation to outsourcing intentions (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) (Hypotheses H2/ Figure 49).

Question 9-1: Please indicate the number of employees in your enterprise.

Figure 18: Number of employees.



Source: Own depiction

The data collected on the number of employees can be systematized on account of the data presented in Chapter 2.1.2.1 according to the definition of the IFM (2017) (Center for Small and Medium-Sized Business Research) and the EC (European Commission). According to the two definitions of the number of employees, five size classes can be formed. This classification option was used in the present study.

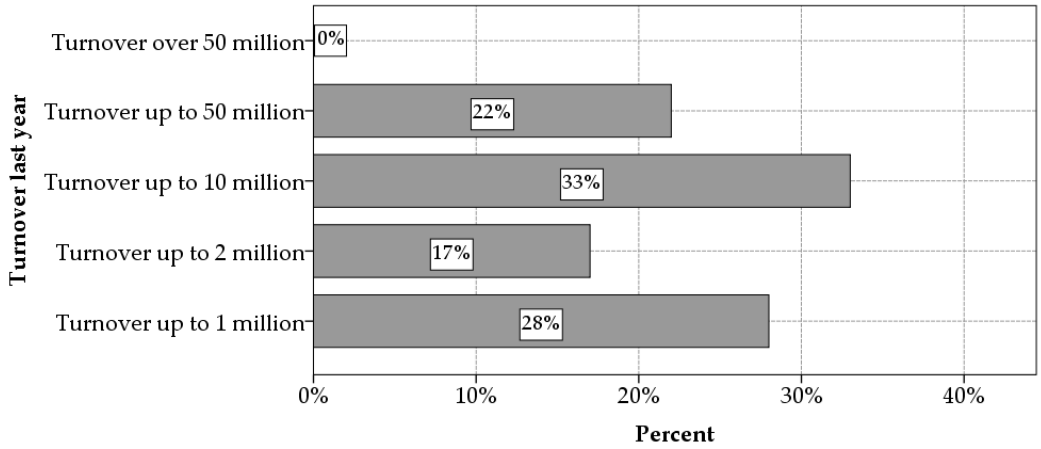
Based on the information received from the SMEs surveyed, it can be concluded that the majority of the SMEs surveyed employ between 100 to 249 employees (25%) (IFM 2017) and between 10 to 49 employees (24%) (IFM 2017). Enterprises with up to 9 employees (IFM 2017) account for 19 percent and can be classified as micro-enterprises (IFM 2017) as defined by the IFM (2017). Moreover,

enterprises with 50 to 99 employees represent 17 percent of the surveyed enterprises, while enterprises with 250 to 499 employees represent 15 percent of the surveyed SMEs. This consideration was based on the highest-ranking results.

Thereafter, the turnover (IFM 2017) for the previous year was questioned. This was also based on the intention to classify the enterprises surveyed as SME in accordance with the IFM's definition of SMEs (IFM 2017). The following question was therefore posed to the participants surveyed.

Question 9-2: What was your turnover in the last financial year?

Figure 19: Turnover in the last financial year (euros).



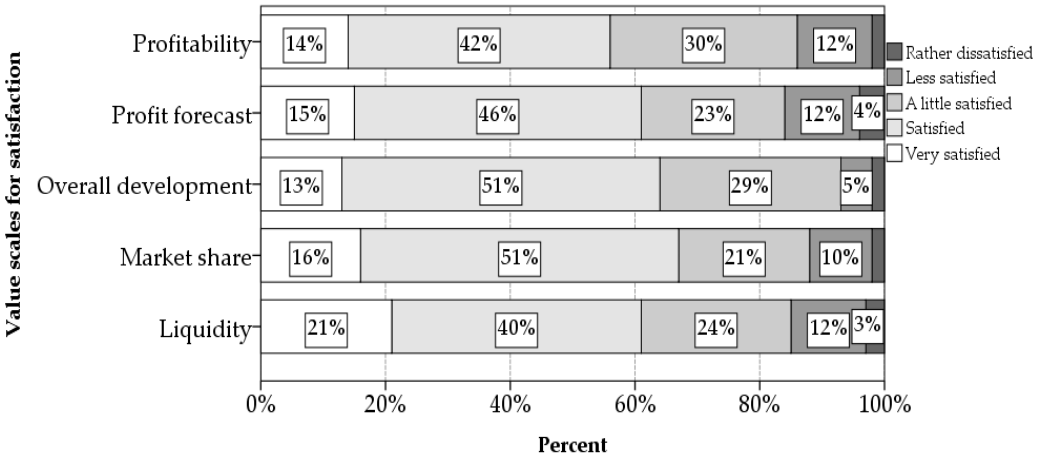
Source: Own depiction

Consequently, in accordance with the definitions of the IFM (2017) and European Commission (EC) (Broich 2015: 17; Schröder 2017: 13; Eymannsberger 2017: 93; Kruse 2012: 17; Diederichs 2014: 41) (Chapter 2.1.2.1), no enterprise with a turnover exceeding 50 million per year was included in the survey. The results show that 33 percent of the participants surveyed stated a turnover of up to 10 million euros (Broich 2015: 17; Schröder 2017: 13; Eymannsberger 2017: 93; Kruse 2012: 17; Diederichs 2014: 41), which in this case, is the largest share, followed by enterprises with a turnover of up to 1 million (Broich 2015: 17; Schröder 2017: 13; Eymannsberger 2017: 93; Kruse 2012: 17; Diederichs 2014: 41) with a share of 28 percent. Moreover, 22 percent of the enterprises surveyed stated that their turnover was up to 50 million. A turnover of up to 2 million euros is represented by 17 percent of the enterprises surveyed.

Another question concerned satisfaction with certain business activities. In order to compare the answers, the results were presented in a stacked bar chart. Therefore, participants were asked the following question to assess their satisfaction with certain business activities.

Question 9-3: How satisfied are you with your profitability, profit forecast, overall development, market share, and liquidity?

Figure 20: Satisfaction with certain business activities.



Source: Own depiction

The results show that almost two-thirds of the participants are satisfied or very satisfied with the business activities surveyed. Furthermore, the results show that the surveyed enterprises have similar outcomes or perspectives regarding their business activities so that the results are not far apart. The following evaluation is based on the sequence of business activities shown in the figure. If the answer options satisfied and very satisfied are summarized, it can be seen that 56 percent of the SMEs surveyed stated that they are satisfied to very satisfied with their profitability, followed by profit forecast with 61 percent. Moreover, the answer option overall development shows a result of 64 percent. In view of market share, 67 percent of the enterprises surveyed stated that they are satisfied or very satisfied with their market share, which also represents the highest proportion within this result. In addition, 61 percent stated that they are satisfied to very satisfied with their liquidity.

The result concerning the market share with 67 percent is in line with the observations of scientists like Lohr (2012: 35) as explained in Chapter 3.1.1.2. Lohr (2012: 35) examined the SMEs regarding the importance of management accounting in their enterprise (Lohr 2012: 35) and found that the surveyed SMEs do not consider management accounting to be very important (Lohr 2012: 35), reasoning this by that they have a good market situation, and the cost-benefit ratio is unequal (Lohr 2012: 35).

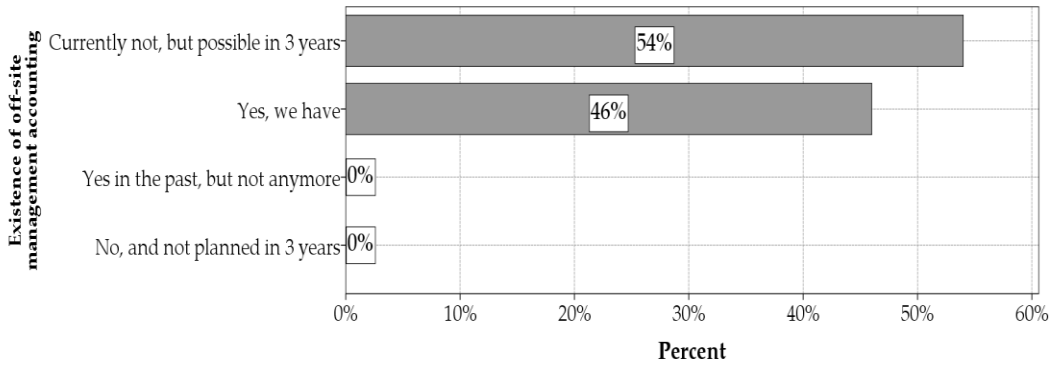
There is also equality in view of their dissatisfaction with the business activities surveyed, with the result that more than 30 percent, which represents almost a third of the enterprises surveyed, are little or less satisfied with the results of their business activities. Such dissatisfaction could be due to their lack of financial resources (Kolb 2006: 12) which is reflected in the results in view of liquidity and profitability as both show the highest proportion of answer options to be little to less satisfied. In this respect, Chapter 2.1.2.2 made it clear that SMEs, for instance, are disadvantaged compared to big-sized enterprises due to financial restrictions (Kolb 2006: 12). Consequently, the results in the form of little to less satisfaction with the business activities surveyed could be an indicator of the assumptions made in Chapter 2.1.2.2.

The answer option that the participants are rather dissatisfied with the surveyed business activities has been assessed by the enterprises surveyed as 2 to 4 percent. This is a small number in relation to the number of enterprises surveyed.

Subsequently, the status quo of management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) was queried. The surveyed SMEs were asked whether they currently implemented an off-site management accounting (Horak 1995: 128; Pössl 1991: 60) in their enterprise or whether they intend to implement an off-site management accounting (Horak 1995: 128; Pössl 1991: 60) in the medium term. Hence, the participants were asked to answer the following question.

Question 9-4: Do you currently have an off-site management accounting in your enterprise?

Figure 21: Existence of off-site management accounting.



Source: Own depiction

The results of this question show that more than 54 percent of the enterprises surveyed have not implemented off-site management accounting (Horak 1995: 128; Pössl 1991: 60), however, they can imagine implementing an off-site management accounting (Horak 1995: 128; Pössl 1991: 60) within the next three years. As many as 46 percent of the enterprises surveyed have already implemented off-site management accounting (Horak 1995: 128; Pössl 1991: 60).

In order to be able to answer this question, the online questionnaire (Atteslander 2010: 166) was accompanied by an explanation of an off-site management accounting (Horak 1995: 128; Pössl 1991: 60). Off-site management accounting (Horak 1995: 128; Pössl 1991: 60) has been defined in such a way that the off-site management accounting consultant (KPMG 2018: 5 et seq.) acts as a partner of enterprise management (KPMG 2018: 5 et seq.). In doing so, the enterprise management provides him with enterprise data, or the off-site

management accounting consultant analyses the data in collaboration with the company's tax advisor (Ossadnik et al. 2010: 44) or – ideally – in collaboration with a data scientist (Horváth et al. 2014: 47 et seq.) if the enterprise employs such a specialist (Horváth et al. 2014: 47 et seq.). Should this not be the case, it was suggested that data science expertise (Horváth et al. 2014: 47 et seq.) can be acquired through outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11), including the necessary technology (Accenture 2018).

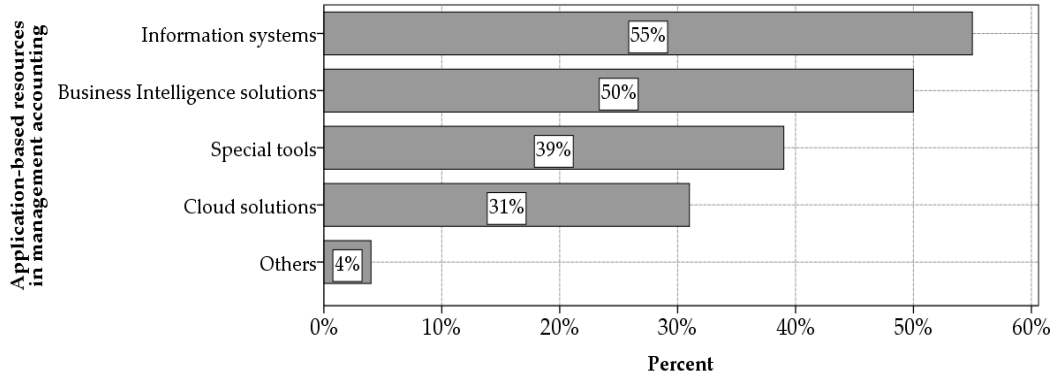
The results do not show how off-site management accounting (Horak 1995: 128; Pössl 1991: 60) is structured, which means that the results do not indicate whether the implemented off-site management accounting (Horak 1995: 128; Pössl 1991: 60) supports an on-site management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149) if certain competencies such as data science (Gleich et al. 2016: 73 et seq.) are missing. Regardless of the form of management accounting, the results confirm the assumptions that there are far too few enterprises that have management accounting or have off-site management accounting (Horak 1995: 128; Pössl 1991: 60), as mentioned in Chapter 3.2.1 (Klett et al. 2010: 6 et seq.). This can be realized by that less than half of the enterprises surveyed stated that they had off-site management accounting (Horak 1995: 128; Pössl 1991: 60).

The result is therefore more in the middle and provides a picture of the existing and potential management accounting.

In order to question the status quo of management accounting in the surveyed enterprises, the participants were asked to refer to the application-based resources (Accenture 2018) that they currently use in management accounting. They were therefore asked to answer the following question.

Question 9-5: Which application-based resources do you use in management accounting?

Figure 22: Application-based resources in management accounting.



Source: Own depiction

The results show that more than half of the SMEs surveyed use management information systems (MIS) (Pleitner 1989: 446), which is not surprising since such systems have been used by SMEs since the early 1990s (Pleitner 1989: 446), as already discussed in Chapter 3.1.1 with reference to scientists like Pleitner (1989: 446).

In the course of his studies, Pleitner (1989: 446) found that there is an increasing demand for information systems (Pleitner 1989: 446), which was the case in the late 1980s (Pleitner 1989: 44). The demand was expressed by experts who recognized the need for information systems that could support management with the aid of well-prepared information (Pleitner 1989: 446). At this point, it is useful to briefly outline how management information systems work. Management information systems collect computer-based data, process it, and make it available to management. Depending on the current system status, Big Data applications may also be available. Data and information are usually displayed graphically.

Based on the outcome of this question, information systems are therefore still used today. This was confirmed by 55 percent of the SMEs surveyed.

Regarding the Business Intelligence (Bühler et al. 2018: 197; BMWi 2017: 4 et seq.; Diamant 2017: 6; Keimer et al. 2020: 2 et seq.) solution answer option, the participants were informed that the answer option relates to the use of analytical systems (Bühler et al. 2018: 197; BMWi 2017: 4 et seq.; Diamant 2017: 6; Keimer et al. 2020: 2 et seq.). Considering this result, it can be seen that 50 percent of the participants use Business Intelligence solutions (Bühler et al. 2018: 197; BMWi 2017: 4 et seq.; Diamant 2017: 6; Keimer et al. 2020: 2 et seq.) that, for example, include data warehousing solutions (Bühler et al. 2018: 197; BMWi 2017: 4 et seq.; Diamant 2017: 6; Keimer et al. 2020: 2 et seq.). This result shows that there are already SMEs that rely on analytics (Bühler et al. 2018: 197; BMWi 2017: 4 et seq.; Diamant 2017: 6; Keimer et al. 2020: 2 et seq.) and that can be classified as progressive. At this point, it is useful to emphasize that these two results are well ahead of the others.

According to the survey, 39 percent of the participants stated that they use special management accounting tools, such as deviation analyses, followed by 31 percent who stated that they use cloud solutions (KPMG 2018: 5 et seq.; Diamant 2017: 2 et seq.; Keimer 2020: 2 et seq.). Furthermore, 4 percent of the respondents answered that they use other applications (BMWi 2017: 4 et seq.; Saam et al. 2016: 28 et seq.). On the whole, the results show that the SMEs surveyed use tools related to digital transformation to some extent. The results can thus be interpreted as an indication that the topic of digital transformation (Keimer et al. 2020: 2 et seq.; Horváth et al. 2014: 47 et seq.; Gleich et al. 2016: 73 et seq.; Accenture 2018; Kieninger et al. 2015: 5 et seq.; Heinrich 2018: 116) is recognized and partially implemented by the SMEs surveyed as was the case in other studies. As shown in Chapters 4.3.2 and 4.3.3, studies by the BMWi (2017: 4 et seq.) and the ZEW (Saam et al. 2016: 28 et seq.) indicate that SMEs are using applications (BMWi 2017: 4 et seq.; Saam et al. 2016: 28 et seq.) in connection with the digital transformation by using cloud solutions (BMWi 2017: 4 et seq.; Saam et al. 2016: 28 et seq.).

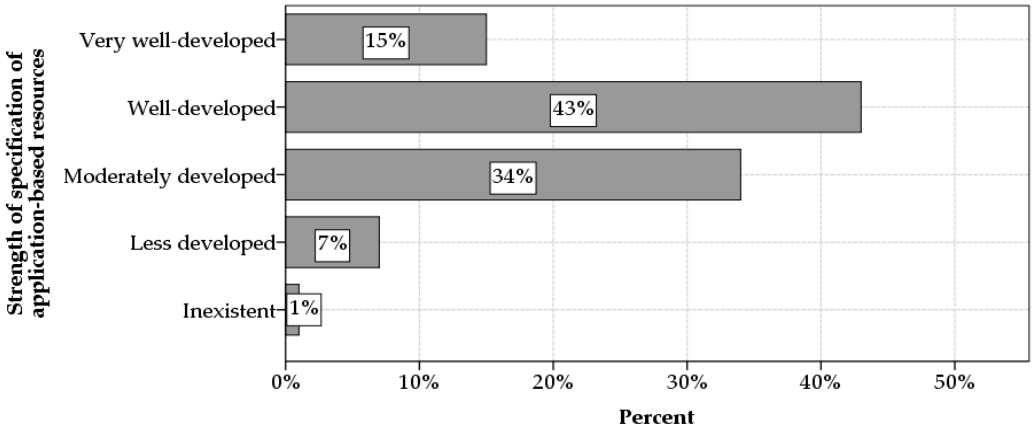
In connection with the previous question, which is about what kind of application-based resources (Saam et al. 2016: 28 et seq.) exist within management accounting, it is useful to explore their strengths of the specification (Williamson 1981: 560). The reason for the questioning is that the results can help to show the maturity level (Schwalbach 2018: 122 et seq.; Bühler et al. 2018: 197) of the current

management accounting and point out the possibilities for outsourcing potentials (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11). The results can also show how competitive the SMEs surveyed are at present and how far they differ from other market participants.

Thus, the participants were asked to answer the following question.

Question 9-6: How strong is the specification of the application-based resources in management accounting?

Figure 23: Strength of specification of application-based resources.



Source: Own depiction

The summary examination of the first two answers shows that more than half of the respondents (58 percent) stated that the specification of the application-based resources (Accenture 2018) in management accounting is very well- to well-developed: 15 percent considered it to be very well-developed, and 43 percent stated that it is well-developed. Furthermore, about one-third of the respondents, which is 34 percent, indicated that the specification of the application-based resources is moderately developed, while 7 percent indicated that it is less developed. A very small number of the surveyed SMEs, that is 1 percent, stated that there is no specification on application-based resources.

In this respect and as shown in Chapter 7.1.2, application-based resources can be assigned to the objects of investigation of the resource-based theory and thus be considered as a resource that represents a high value within enterprises. The higher their strength is perceived by the SMEs surveyed – in the sense of differentiation

from the competitors, in this case, with the aid of the 5-step Likert scale (Keimer et al. 2020: 62 et seq.) – the lower the risk of being imitated (Samadi 2008: 98) as specified by the resource-based theory (Kühnl 2010: 62; Bucerius 2004: 18; Krause 2008: 88; Six 2012: 61).

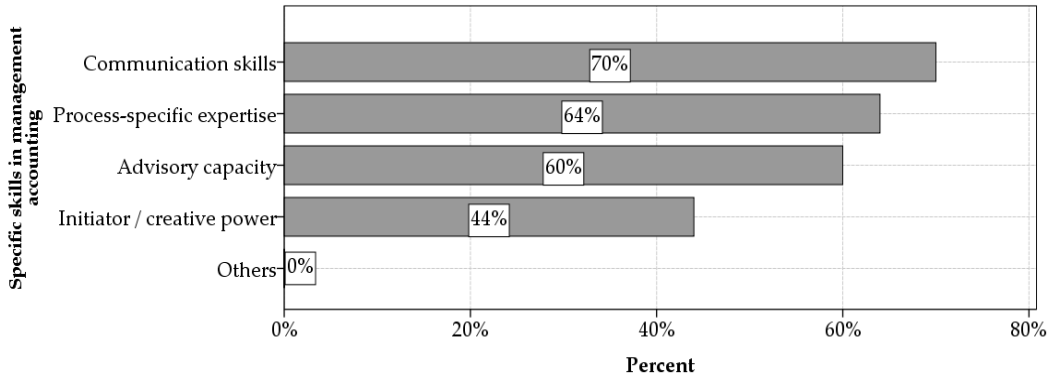
However, the individual answers show that none of them is outstanding, which means that none of the results exceeds the 50 percent limit. This raises the question of how successful these surveyed SMEs are in the market, as scientists like Kühnl (2010: 62) believe that unique resources contribute to performance improvement (Kühnl 2010: 62; Bucerius 2004: 18; Krause 2008: 88; Six 2012: 61).

Furthermore, the surveyed SMEs were asked to refer to specific management accounting skills. The results in view of the specific skills are very important as they can provide information on the competencies of the person responsible for management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) and can therefore be used as a reference to determine the extent of purchases of off-site services.

The skills were examined using the following question.

Question 9-7: What specific skills do you have in the area of management accounting?

Figure 24: Specific skills in management accounting.



Source: Own depiction

Seventy percent of the respondents said that there was a predominance of communication skills (Wankel 2008: 407) within management accounting, followed by process-specific (Accenture 2018) expertise at 64 percent.

Both results may seem high at first glance, however, it is questionable whether the competencies (Gleich et al. 2016: 73 et seq.; Kaltenbacher 2011: 78; Piezonka 2013: 13) surveyed are sufficient to advise and guide enterprise management. In addition, the other results show that only 60 percent of advisory capacity is available. Moreover, the ability to act as initiator and show creative power was rated even lower by 44 percent of the SMEs surveyed. However, such exemplary skills should be available to a large extent in SMEs due to the demands placed on SMEs. As shown in Chapter 7.1.2, according to Krause (2008: 88), specific skills can be considered unique resources, which in turn requires management accountants to have extensive and specialized know-how that cannot be imitated by other enterprises (Krause 2008: 88). Thus, it would make sense to improve the know-how in management accounting by purchasing off-site services or through outsourcing measures (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) as a possible option for SMEs. However, it should be mentioned that other challenges such as the digital transformation (Keimer et al. 2020: 2 et seq.; Horváth et al. 2014: 47 et seq.; Gleich et al. 2016: 73 et seq.; Accenture 2018; Kieninger et al. 2015: 5 et seq.; Heinrich 2018: 116) also require a status query of the participants. Thus, in a subsequent question, participants were asked to indicate their digital maturity level (Bühler et al. 2018: 197; Schwalbach 2018: 122 et seq.) within management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.). In order to answer this question, participants were provided with a self-made digital maturity model (see Chapter 6.1, Figure 11). Within this digital maturity model, the maturity level was based on the tasks and roles of the management accountants. For the purpose of clarity, the individual levels are briefly listed again below.

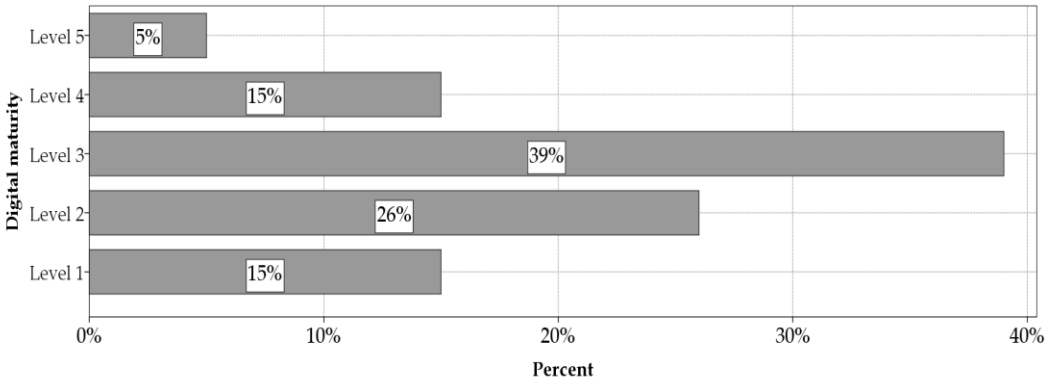
The business partner represents the highest level within this digital maturity model and is therefore listed first, followed by the lower levels.

- Level 5: Business Partner
- Level 4: Data Scientist
- Level 3: Change Manager
- Level 2: Navigator
- Level 1: Controller

The following question was posed to the participants to question the status quo of digital maturity in management accounting.

Question 9-8: What digital maturity do you have in management accounting based on the role model?

Figure 25: Digital maturity role model of management accounting.



Source: Own depiction

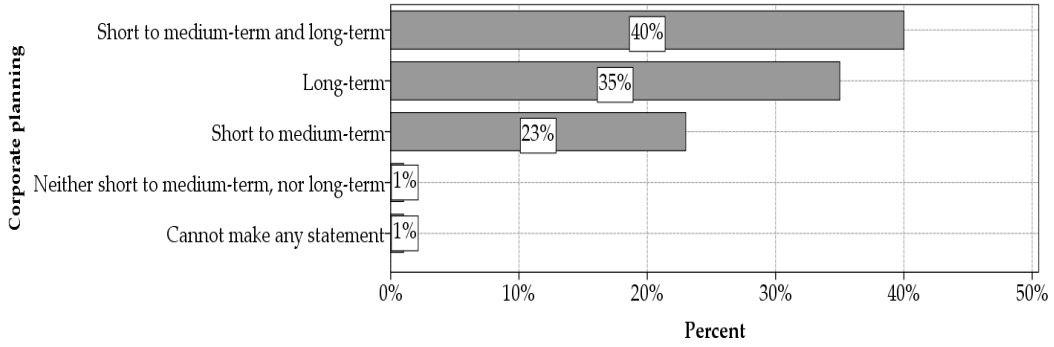
The majority of participants stated that their digital maturity (Schwalbach 2018: 122 et seq.; Bühler et al. 2018: 197) in management accounting – based on the role model – corresponds to Level 3 with 39 percent, which is represented by the change manager (Gleich 2013: 33 et seq.), followed by Level 2 with 26 percent, which is represented by the navigator (Weber et al. 2000: 184 et seq.). Levels 1 and 4 show the same result with 15 percent, which is personified by the data scientist (Horváth et al. 2014: 47 et seq.) and the controller (Weber et al. 2000: 184 et seq.). The lowest result is Level 5 with 5 percent, which is represented by the business partner (Sesler et al. 2020: 4 et seq.).

The reason why the majority of participants chose the change manager (Gleich 2013: 33 et seq.) response option as the current level of digital maturity within management accounting could be that they are in a process of change or intend to bring about change and thus need to be guided by a person who is able to supervise processes of operational change caused by digital transformation (Accenture 2018). The progress on Levels 4 (data scientist) (Horváth et al. 2014: 47 et seq.) and 5 (business partner) (Sesler et al. 2020: 4 et seq.) would then be the next step since these two steps must be preceded by Level 3 (change manager). Thus, Level 3 (change manager) (Gleich 2013: 33 et seq.) must be used to create the prerequisite for achieving management accounting at a high level, as would be the case with the data scientist (Horváth et al. 2014: 47 et seq.), which is followed by the business partner (Level 5) (Sesler et al. 2020: 4 et seq.) according to Figure 11.

In a subsequent question, which also referred to the status quo of management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.), participants were asked to give advice on how they exercise corporate planning (Hahn 2013: 186). Thus, participants were asked to refer to the following question.

Question 9-9: How do you carry out corporate planning?

Figure 26: Execution of corporate planning.



Source: Own depiction

The information provided by the participants shows that 40 percent of the SMEs surveyed carry out short to medium-term and long-term planning – which means a corporate planning (Hahn 2013: 186) that takes all planning horizons into account.

In this respect, short- to medium-term planning includes operative management accounting, while long-term planning can be characterized by strategic management accounting (Erichsen 2010: 68 et seq.). As a consequence, 40 percent of the SMEs surveyed seem to take this into account. Compared to this result, 35 percent of the enterprises surveyed carried out long-term corporate planning (Hahn 2013: 186), and 23 percent of the participants carried out short- to medium-term corporate planning (Hahn 2013: 186). Both results show that the enterprises limited themselves to only one planning horizon. Furthermore, only a very small proportion of 1 percent did not carry out planning tasks (Hahn 2013: 186) or did not want to comment on them.

Within this query, the question of only short-term planning was omitted. The reason for this is that this topic has already been addressed and analyzed by scientists like Sierke et al. (2015: 23 et seq.) as discussed in Chapter 3.2.4. In the course of their studies (Sierke et al. 2015: 23 et seq.), they found that 98 percent of the SMEs surveyed carried out short-term planning due to the rapidly changing market situation (Sierke et al. 2015: 23 et seq.).

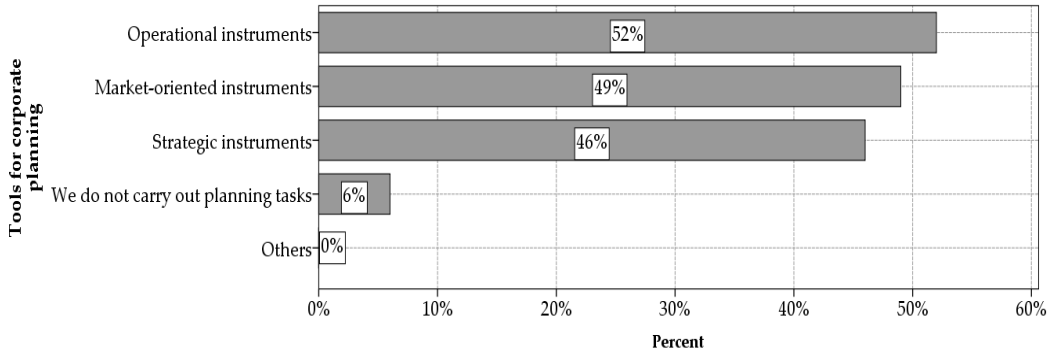
However, this is actually a high result, especially questionable within the scope of enterprise crisis. Many enterprises, including SMEs, lack systematic overall planning, which can be seen from current practice. Even though the market is rapidly changing, some progress and forecasts require medium-term and long-term planning in addition to short-term planning.

Reasons for very high results, as shown in the study by Sierke et al. (2015: 23 et seq.), may be due to the fact that the SMEs surveyed were not in a position to capture future progress and business and to the lower level of know-how regarding suitable planning instruments (Mehlan 2007: 11; Tschandl 2012: 16), which also includes tools of medium- and long-term planning (Mehlan 2007: 11; Tschandl 2012: 16).

Regarding the status quo of management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) and in connection with the previous question about the planning horizon of corporate planning (Hahn 2013: 186), the participants were asked to indicate which tools they use for corporate planning (Hahn 2013: 186). The participants were asked the following question.

Question 9-10: Which tools do you use for corporate planning?

Figure 27: Tools used by SMEs for corporate planning.



Source: Own depiction

The results clearly show that half of the SMEs surveyed used operational instruments (52 percent). These included break-even analyses and budgeting (Pössl 1991: 53 et seq.; Gleich 2008: 253), followed by market-oriented instruments, which included both the consideration of market specifics and the needs of the target groups. This question offered multiple-choice answer options.

Thus, 46 percent of the SMEs surveyed stated that they use strategic instruments for corporate planning such as benchmarking, balanced scorecards, and competitive analyses. Only 6 percent stated that they do not carry out any planning tasks (Pössl 1991: 53 et seq.; Gleich 2008: 253). On the whole, the results show that the tools of corporate planning are used in equal proportions by the enterprises surveyed as the results are not very far apart. They range between 46 and 52 percent.

So far, questions have been asked about the status quo of management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.). In this respect, the question

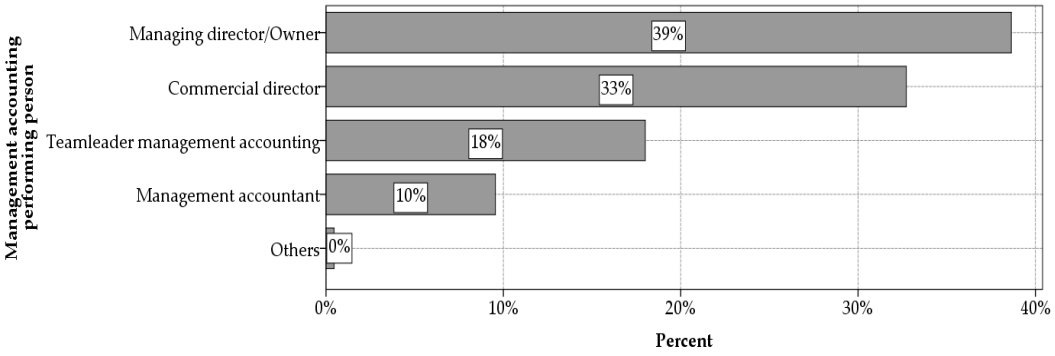
arises as to who is responsible for management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.). This question is also of great importance in view of outsourcing intentions, as outsourcing plans can be influenced by this person (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11). Moreover, it contributes to answering the research question posed in Chapter 1.1.

In this respect, the following questions should also be used to give answers to the research question.

Thus, the participants were asked to indicate this by means of the following question.

Question 9-11: Who performs management accounting functions in your enterprise?

Figure 28: Person in charge of performing management accounting functions.



Source: Own depiction

The results confirm the assumption described in Chapter 3.2.1 that management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) are often performed by the managing director or owner himself (Klett et al. 2010: 6 et seq.; Tegel 2015: 132; Deloitte 2008: 7 et seq.). As shown in the figure above, 39 percent of the SMEs surveyed stated that management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) are performed by the managing director or owner himself (Klett et al. 2010: 6 et seq.; Tegel 2015: 132; Deloitte 2008: 7 et seq). This is more than a third of the SMEs surveyed and the highest result in this question.

At this stage, it is useful to mention that this topic was also investigated in other studies (Deloitte 2008). There is, for instance, the study of Deloitte carried out in 2008 and referred to in Chapter 4.4.1. The results of the study of Deloitte (2008) show that in more than 30 percent of the SMEs surveyed (Deloitte 2008: 7 et seq.), management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) belong to the managing director's or owner's area of competence (Deloitte 2008). This result is similar to the results of this study. Although the study of Deloitte (2008) was conducted over 12 years ago, little has changed in the fact that the managing director or owner mainly performs management accounting functions (Klett et al. 2010: 6 et seq.; Tegel 2015: 132; Deloitte 2008: 7 et seq.). Thus, the assumptions made in Chapter 3.2.1 that, in most cases, the managing director or owner performs management accounting tasks (Klett et al. 2010: 6 et seq.; Tegel 2015: 132; Deloitte 2008: 7 et seq.) can be confirmed.

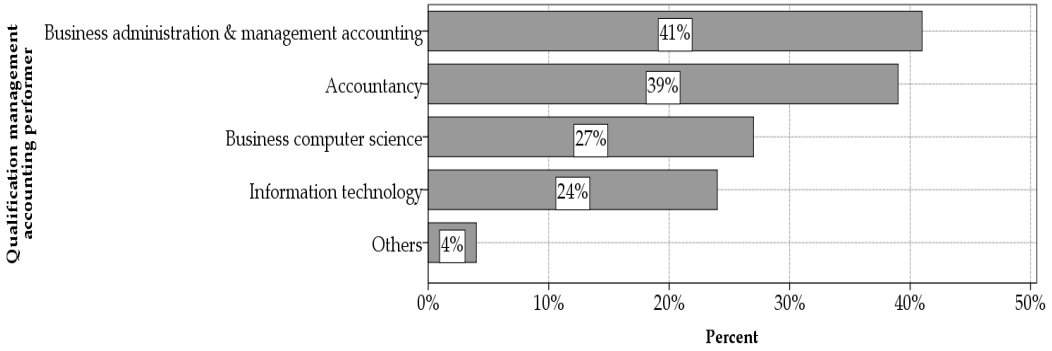
Other SMEs surveyed stated that 33 percent of the management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) are performed by the commercial director. In this respect, it is remarkable that the management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) are performed by holders of high positions. This is evident from that a smaller number of the SMEs surveyed, namely 18 percent, stated that management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) are performed by the management accounting team leader, and 10 percent stated that they are performed by the management accountant himself. Basically, when both results – together 28 percent – are combined, it becomes clear that only one-third of management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) are performed by management accountants.

This raises the question of what qualifications (Kaltenbacher 2011: 78) the person performing management accounting (Kaltenbacher 2011: 78) has and, moreover, should have due to influences caused by outsiders (Volkens et al. 2017: 44). Scientists like Volkens et al. (2017: 44) attach great importance to the skills of the person performing management accounting (Volkens et al. 2017: 44), as discussed in Chapter 2.2.2.1. Volkens et al. (2017: 44) argued this by referring to challenges posed by the digital transformation, which requires adapting current skills to more digital know-how (Volkens et al. 2017: 44).

Thus, the following question was asked to research the qualification of the person performing management accounting.

Question 9-12: What qualifications does the person performing the management accounting have?

Figure 29: Qualification of the person performing the management accounting.



Source: Own depiction

The vast majority (41 percent) of participants stated that the management accounting performing person has knowledge of business administration, including management accounting. A further 39 percent stated that the person performing the management accounting has knowledge in the field of accounting.

This result provides a useful basis, as it is generally the case that management accountants analyze data from accounting, and it can, as a consequence, be assumed that employees who have knowledge of accounting will also perform management accounting tasks. Regarding business computer science (Horváth et al. 2014: 47 et seq.), 27 percent of the enterprises surveyed stated that their management accounting employee has the relevant experience. Furthermore, knowledge related to information technology can be realized by 24 percent of the surveyed SMEs. Only 4 percent of the participants stated that the qualification of the person performing management accounting (Kaltenbacher 2011: 78) differs from those listed here.

The results show that the traditional way of thinking about management accounting know-how still exists. It is about the know-how in business administration, including management accounting and accountancy, which is the highest result of this question. Moreover, it is often the case that SMEs expect one

employee to cover both tasks (Wrase 2010: 13 et seq.). This could be due to financial issues and due to the agglomeration (Wrase 2010: 13 et seq.) of power. However, the job profile of management accountants has changed over time, which means that state-of-the-art SMEs should focus on the data science (Horváth et al. 2014: 47 et seq.) and consulting capacity (Accenture 2018) offered by service partners who are engaged in digital transformation (Accenture 2018) and management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.).

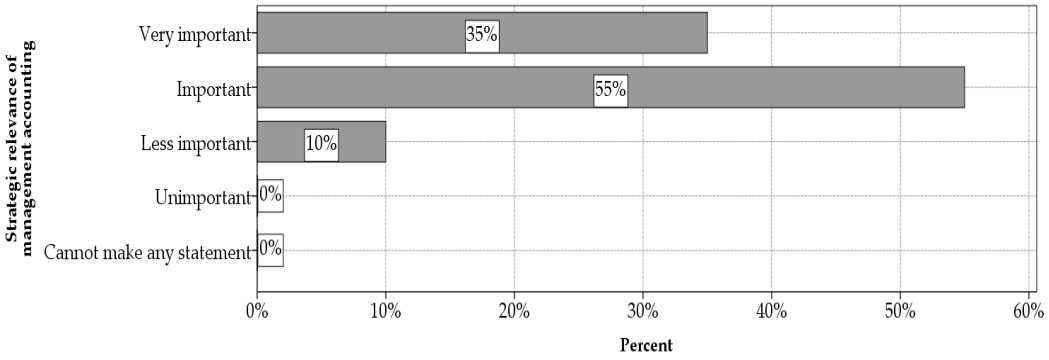
In this conjunction, as discussed in Chapter 6.1, data scientists (Horváth et al. 2014: 47 et seq.) can support enterprise management with know-how in drawing conclusions from data (Horváth et al. 2014: 47 et seq.). Accordingly, it would be desirable to achieve a higher result than is the case in this question regarding business computer science and information.

Within the scope of the dissertation project, which deals with the outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) of management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.), it was also important to question what strategic importance the surveyed SMEs attach to the business field of management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.). From the answers, conclusions can be drawn regarding the interest of the surveyed SMEs in outsourcing measures (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11).

To investigate this, the following question was posed to the participants.

Question 9-13: How important is the strategic relevance of management accounting in your enterprise?

Figure 30: Strategic relevance of management accounting.



Source: Own depiction

A look at the first two possible answers shows that 90 percent of the participants considered the strategic relevance (Lohr 2012: 35) of management accounting to be important to very important.

Based on this result, it can be assumed that the SMEs surveyed attach great importance to strategic management accounting (Lohr 2012: 35). Regarding the other results, only 10 percent of the participants considered the strategic relevance (Lohr 2012: 35) of management accounting to be less important. This result confirms the assumptions of scientists like Lohr (2012: 35), as shown in Chapter 3.1.1.2, who have investigated the reasons why some SMEs consider management accounting together with its strategic orientation to be less important (Lohr 2012: 35).

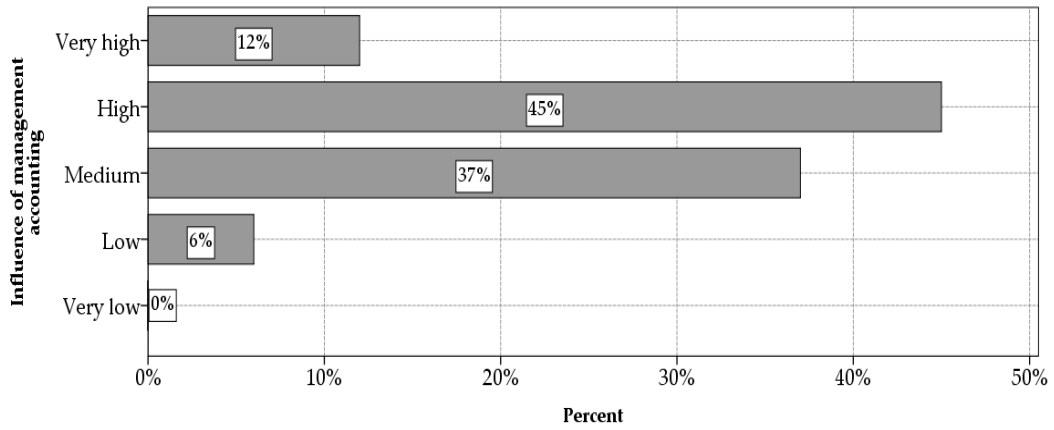
In his studies, Lohr (2012: 35) had found that the cost factor plays an important part when it comes to implementing management accounting with the associated strategy (Lohr 2012: 35). Thus, on account of his study results, conclusions can be drawn about the existing results, in so far as the strategic importance (Lohr 2012: 35) of management accounting is secondary for some SMEs.

Moreover, the other results show that none of the participants stated that they considered the strategic importance (Lohr 2012: 35) of management accounting to be unimportant. Furthermore, no SME stated that it cannot make any statement.

In the course of this survey, it was also important to find out the extent of power (Weinberger 1991: 124; Sieloff 2007: 196 et seq.) the surveyed participants ascribe to management accounting within their enterprise in order to be able to draw conclusions about outsourcing intentions (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) regarding management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.). Thus, the following question was posed to the participants.

Question 9-14: How high do you estimate the influence of management accounting in your enterprise?

Figure 31: Influence of management accounting.



Source: Own depiction

The results show that 57 percent (12 percent indicated very high and 45 percent indicated high) of the participants rated the influence of management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) in their enterprise as high or very high.

This result is not particularly prominent and is also weakened by the result of the subsequent answer option as 37 percent of the participants believed that the influence (Weinberger 1991: 124; Sieloff 2007: 196 et seq.) of management accounting in their enterprise is rather medium. The difference between the result of the high (45 percent) and medium (37 percent) response options is not very large. Moreover, 6 percent believed that the influence (Weinberger 1991: 124; Sieloff 2007:

196 et seq.) of management accounting is low. None of the participants indicated the influence is very low.

In connection with these results, it was shown with the aid of Chapter 3.2.2 that employees of certain organizational units, such as management accounting, fear losing power if there are outsourcing plans (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) that affect employees (Weber 1993: 9). Thus, it can be assumed that the stronger the position (Schuhmacher 2005: 161; Donaldson 2001: 153) of management accounting within the enterprise is, the less willing the employees of the management accounting department are to distribute power (Schuhmacher 2005: 161; Donaldson 2001: 153).

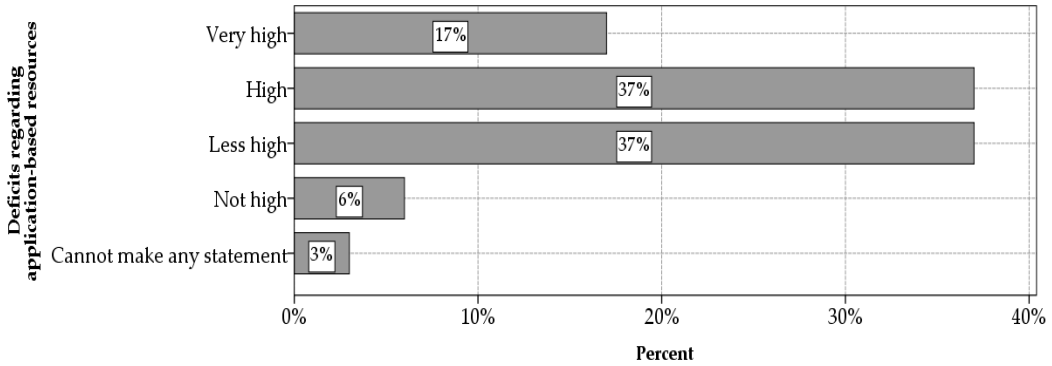
However, the results do not show that management accounting has a strong position within the enterprises surveyed. This could be due to that the managing director or the owner himself mainly performs management accounting functions (Klett et al. 2010: 6 et seq.) (see the result of Question 9-11 with 39 percent) and the influence of management accounting is therefore not apparent at first glance. However, it may also be that there is no management accounting at all.

The lack of a management accounting (Klett et al. 2010: 6), as well as deficits in the presence of a management accounting, have been discussed so far. To narrow down the questions of the survey, the deficits were divided into application-based resource deficits and competence deficits (Kaltenbacher 2011: 78; Piezonka 2013: 13). Participants were therefore asked to assess these deficits.

The deficits were queried with the following question.

Question 9-15: How high do you estimate the deficits in application-based resources?

Figure 32: Assessing the deficits in application-based resources.



Source: Own depiction

The results show that a total of 54 percent of the participants rated the deficits in application-based resources (Kaltenbacher 2011: 78; Piezonka 2013: 13) as high to very high. On closer inspection, 17 percent estimated the deficits in application-based resources to be very high and 37 percent as high.

Another 37 percent considered their deficits in application-based resources (Kaltenbacher 2011: 78; Piezonka 2013: 13) to be less high. Moreover, 6 percent of the SMEs surveyed stated that the deficits in application-based resources (Kaltenbacher 2011: 78; Piezonka 2013: 13) are not high. In addition, 3 percent of the SMEs surveyed stated that they could not make any statement about the extent of application-based deficits (Kaltenbacher 2011: 78; Piezonka 2013: 13).

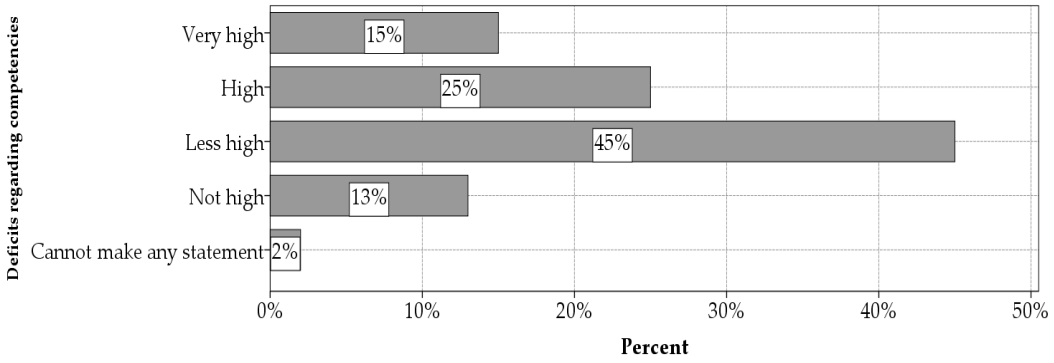
In this view, as stated in Chapter 4.4.2, a study of Diamant (2017: 2 et seq.) shows that only 15 percent of the SMEs surveyed use application-based solutions (Diamant 2017: 2 et seq.) and that more than 50 percent are not considering using application-based solutions in the next few years (Diamant 2017: 2 et seq.). Such examples help to make a comparison with the present study. The results of Question 9-15 indicate that application-based resources are only used to a certain extent as was the case in 2017 with the study of Diamant (2017: 2 et seq.). Thus, this comparison shows that little has changed in the attitude of SMEs in view of the use of application-based resources (Diamant 2017: 2 et seq.). Summarized, about half

the respondents stated that they have deficits. Furthermore, some of the results of Question 9-15 show relatively similar assessments of the application-related deficits, which are high and less high in view of the possible answers in that 37 percent were given for both answers.

The following question is related to the deficits in view of competencies (Deloitte 2008: 7 et seq.). In order to evaluate this, the participants were asked the following question.

Question 9-16: How high do you estimate the deficits in management accounting competencies?

Figure 33: Extent of the deficits in management accounting competencies.



Source: Own depiction

The results of this question indicate that the participants assessed the deficits in view of competencies (Deloitte 2008: 7 et seq.) to be less significant. Thus, it can be assumed that 45 percent, which is almost half of the participants, had confidence in the competencies within their management accounting (Deloitte 2008: 7 et seq.). This result contrasts with the result of the first two answer options, which are high and very high.

In summary, as many as 40 percent of those surveyed rated the deficits as being high to very high. Moreover, 13 percent stated that the deficits are not high, and 2 percent stated that they cannot make any statement in this respect.

At this point, it is useful to compare the results of this question with the results of the previously mentioned survey question (Question 9-15), which referred to the deficits in application-based resources (Diamant 2017: 2 et seq.). The comparison shows that the competence deficits within management accounting

(Deloitte 2008: 7 et seq.) are rated lower than the deficits in application-based resources of the surveyed SMEs.

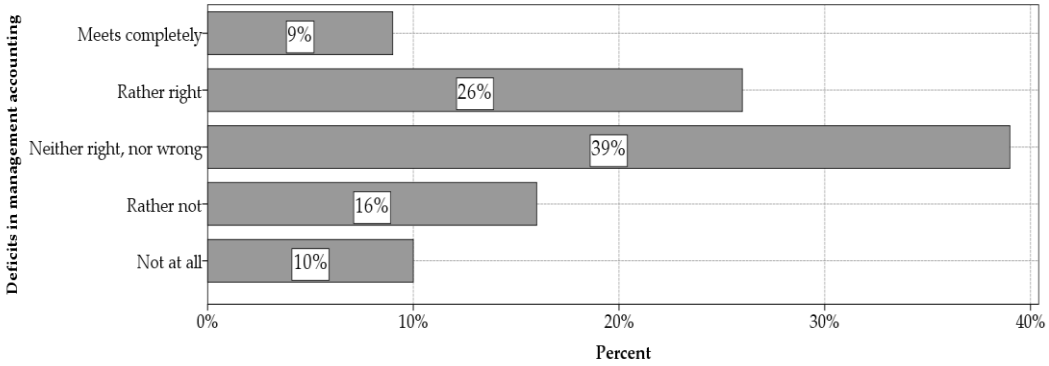
In connection with this result, reference can be made to Chapter 7.1.2, in which the topic of enterprise resources was analyzed. This has also shown that enterprises have unique resources that cannot be imitated. This also includes employees, especially qualified employees, who are considered very valuable (Kaltenbacher 2011: 77 et seq.) as they cannot be replaced easily due to the lack of skilled workers. In this respect, skilled staff is needed in the long-term to support the enterprise activities and contribute to its success (Kaltenbacher 2011: 77 et seq.).

Regarding the deficits, it was important to ask whether the surveyed enterprises are still aware of any deficits within management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.), independent of the deficits in application-based resources and competencies (Gleich et al. 2016: 73 et seq.; Kaltenbacher 2011: 78; Piezonka 2013: 13). Although the results of Questions 9-15 and 9-16 show that 2 or 3 percent of the enterprises are unable to provide information on the deficits in application-based resources and competencies (Gleich et al. 2016: 73 et seq.; Kaltenbacher 2011: 78; Piezonka 2013: 13), which is not too much, the reasons for such statements are not apparent due to the nature of the questions asked. Nor can the reasons for the high or low assessment of the deficits in view of application-based resources or competencies (Gleich et al. 2016: 73 et seq.; Kaltenbacher 2011: 78; Piezonka 2013: 13) be justified.

In order to obtain some information on the SMEs' assessment of possible deficits regarding management accounting, the participants were asked to comment on the following statement.

Question 9-17: Management accounting has no deficits.

Figure 34: Deficits in management accounting.



Source: Own depiction

The results show that 39 percent responded that this statement is neither right nor wrong. Thus, it can be assumed that the majority of respondents cannot or will not commit themselves in this respect. A further 16 percent stated that management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) in their enterprise tends to have no deficits, and 10 percent of the SMEs surveyed stated that management accounting has no deficits at all. This contrasts with the first two results, which show that 9 percent of the enterprises surveyed stated that management accounting has no deficits meets completely, and another 26 percent stated that the statement is rather right.

In this respect, a comparison of the results of the first two answer options with the result of the third answer option shows that the assessment by the respondents is almost equally divided. Irrespective of these results, it was emphasized in Chapter 3.2.2 that managers of SMEs are often not aware of the deficits (Weber et al. 2001: 25 et seq.; Kaltenbacher 2011: 77 et seq.; Piezonka 2013: 13), which include deficits within management accounting (Weber et al. 2001: 25 et seq.; Kaltenbacher 2011: 77 et seq.; Piezonka 2013: 13). The need for off-site management accounting consultants is an indication that enterprises have deficits.

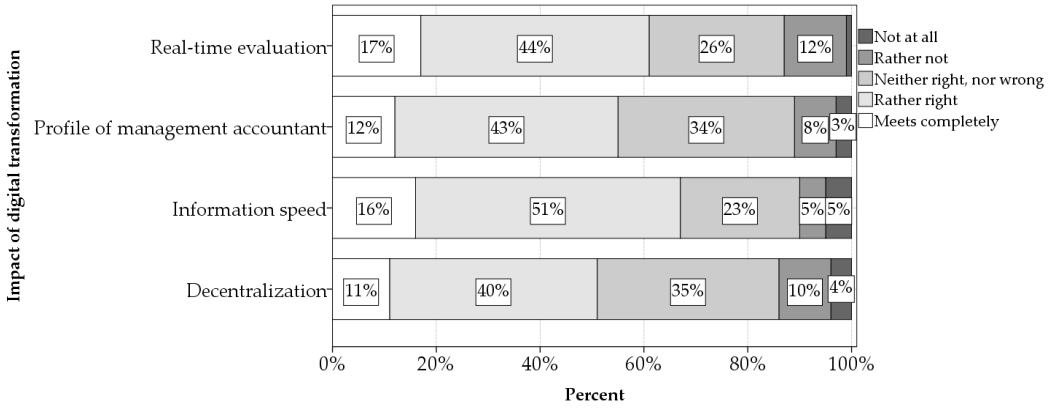
In this view, the reasons for the need for off-site management accounting consultants were highlighted in Chapter 3.2.2, by stating that management accounting needs skilled staff or competencies regarding break-even analyses or return on investment (ROI), to name but a few examples, due to that management accounting lacks such know-how (Pössl 1991: 53 et seq.). Furthermore, as explained in Chapter 3.2.4, off-site management accounting consultants work with future-oriented data and less with historical data (Sierke et al. 2015: 23 et seq.). However, challenges such as digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) require special skills, which cannot be covered by current job profiles in management accounting. In principle, the first three results confirm that management accounting shows deficits, which together account for two-thirds of the result. As a result, the majority of the SMEs surveyed confirm that management accounting has deficits and thus refute this statement.

As can be seen from the previous questions, the topic of off-site management accounting (Horak 1995: 128; Pössl 1991: 60) plays an important role in this study. The aim of this study is to explore the way of thinking and the existence of off-site management accounting (Horak 1995: 128; Pössl 1991: 60). In this respect, great importance is attached to the digital transformation (Accenture 2018). This is due to that it is often considered as an enabler (Kessler et al. 2019: 87 et seq.) that can advance business projects. This provides the opportunity to implement off-site management accounting (Horak 1995: 128; Pössl 1991: 60) for SMEs.

In order to investigate the attitude of the surveyed SMEs in view of digital transformation (Accenture 2018), the influence of digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) within management accounting was investigated by means of some comments as possible answer options.

Question 9-18: Digital transformation will significantly increase the speed and quality of information supply, contribute to real-time evaluation, change the profile of management accountants, and contribute to the decentralization of management accounting.

Figure 35: Impact of digital transformation.



Source: Own depiction

The results of the first two answer options show that, in summary, more than 50 percent of the SMEs surveyed believed that the comments on the effects of digital transformation (Accenture 2018) meet completely or are rather right.

Furthermore, about one-third of the participants stated that the comments are neither right nor wrong. The remaining participants, who represent about 10 percent, believed that digital transformation (Accenture 2018) will rather not or not at all increase the speed and quality of information supply, contribute to the real-time evaluation, change the profile of management accountants, and contribute to the decentralization of management accounting.

The separate consideration of the predefined statements on the effect of digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) on real-time evaluation, respectively real-time data transfer and data exchange shows that the assumptions in Chapter 4.2.2, which state that digital transformation (Albrecht

2015: 3; Kugler et al. 2018: 1 et seq.) influences real-time evaluation (Bühler et al. 2018: 197), have been confirmed. Overall, 61 percent of the participants agreed to the first answer option, stating that it meets completely (17 percent) or is rather right (44 percent).

Regarding the second predefined statement that the digital transformation (Accenture 2018) will influence the profile of management accountants, it can be realized that, in summary, 55 percent (12 percent stated that it meets completely, and 43 percent believed that it is rather right) of the surveyed SMEs agreed with this statement or agreed with the assumptions presented in Chapter 6.1, where Kieninger et al. (2016: 2 et seq.) emphasized that digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) will change processes within management accounting, which in turn will require the adaptation of the profiles of management accountants (Kieninger et al. 2016: 2 et seq.).

Regarding the third answer option, which is that digital transformation will speed up the supply of information (Kieninger et al. 2016: 2 et seq.), it can be seen that a combined 67 percent (16 percent said it meets completely, and 51 percent believed it is rather right) agreed with this statement, which still represents two-thirds of the respondents. Furthermore, this result confirms the assumptions of scientists such as Kieninger et al. (2016: 2 et seq.) as highlighted in Chapter 6.1. Kieninger et al. (2016: 2 et seq.) assume that digital transformation contributes to a rapid supply of information so that enterprise management can soon come to decisions (Kieninger et al. 2016: 2 et seq.).

The fourth answer option, that digital transformation (Accenture 2018) will bring about or contribute to a decentralization of management accounting, was confirmed in summary by 51 percent (11 percent stated that it meets completely, and 40 percent stated that it is rather right) of the enterprises surveyed. In this respect, it has already been assumed in Chapter 6.2 that digital transformation (Accenture 2018) contributes to a decentralization of management accounting, which also includes collaboration with off-site management accounting consultants.

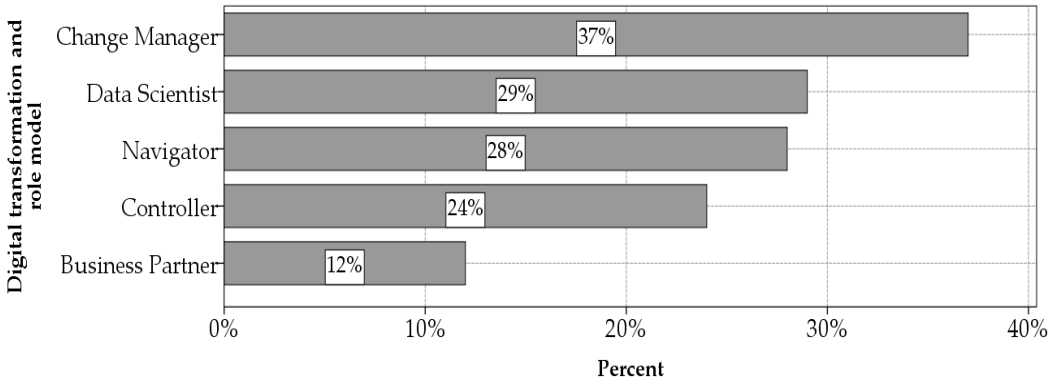
This is due to that off-site management accounting consultants (Accenture 2018) are willing to deal with topics related to digital transformation (Accenture 2018). For instance, they are familiar with solutions such as cloud computing and digital work environments (Heimel et al. 2019: 402).

In summary, more than half of the SMEs surveyed have realized that digital transformation (Accenture 2018) definitely contributes to change. Moreover, around one-third do not want or cannot make a decision regarding the predefined answers and have therefore chosen the answer option neither right nor wrong. Regarding the last two possible answer options, in summary, it can also be stated that about 10 percent of the participants selected the predefined answers rather not, or not at all right.

As the topic of digital transformation (Accenture 2018) is important within the scope of the present work, the surveyed SMEs were asked additional questions. Thus, the participants were asked to comment on the following question. For this purpose, they were provided with an illustration showing the tasks of each role model within management accounting and its digital maturity level (see Figure 11).

Question 9-19: Which future role model corresponds to that of a management accountant in the light of digital transformation?

Figure 36: Digital transformation and role model in management accounting.



Source: Own depiction

In connection with this question, the participants had the opportunity to choose from the following answers. The response options included the role of change manager, followed by data scientist, navigator, controller, and business partner regarding digital transformation (Weber et al. 2000: 184 et seq.; Horváth et al. 2014: 47 et seq.; Stockinger et al. 2016: 59 et seq.; Schuhmann et al. 2016: 453 et seq.; Sesler et al. 2020: 4 et seq.; Gleich 2013: 33 et seq.).

The participants had the option of multiple selections. The vast majority of the participants, namely 37 percent, stated that the future role model of the management accountant (Weber et al. 2000: 184 et seq.; Horváth et al. 2014: 47 et seq.; Stockinger et al. 2016: 59 et seq.; Schuhmann et al. 2016: 453 et seq.; Sesler et al. 2020: 4 et seq.; Gleich 2013: 33 et seq.) regarding the digital transformation will correspond to that of the change managers (Gleich 2013: 33 et seq.). A further 29 percent of the SMEs surveyed indicated that the role of management accountants will change to that of a data scientist (Horváth et al. 2014: 47 et seq.). This result does not seem surprising since the question is related to digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.), which, as a result, leads participants to associate digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) with tasks that can be attributed to the tasks of data scientists. Furthermore, this result confirms the assumptions made in Chapter 6.1 that the role of management accountants (Horváth et al. 2014: 47 et seq.) will change as their duties change due to topics such as digital transformation (Horváth et al. 2014: 47 et seq.). Management accountants are expected to convert data into information so that enterprise management can act proactively to achieve corporate objectives (Horváth et al. 2014: 47 et seq.). This in turn requires the know-how of a data scientist (Horváth et al. 2014: 47 et seq.).

Regarding the third answer option, which concerns the role model of a navigator (Weber et al. 2000: 184 et seq.), it can be realized that 28 percent of the SMEs surveyed stated that the future role model of the management accountant will correspond to that of a navigator (Weber et al. 2000: 184 et seq.). Looking at the results of the second and third answer options, there is little difference between the opinions regarding the future role model of the management accountant (Weber et al. 2000: 184 et seq.). The difference is only 1 percent. Furthermore, neither of the two results differs significantly from the first result, which is represented by the change manager (Weber et al. 2000: 184 et seq.). The difference here is 8 or 9 percent.

Based on these results, it can be assumed that the future management accountant will assume several roles such as change manager, data scientist, and navigator (Weber et al. 2000: 184 et seq.; Horváth et al. 2014: 47 et seq.; Stockinger et al. 2016: 59 et seq.; Schuhmann et al. 2016: 453 et seq.; Sesler et al. 2020: 4 et seq.; Gleich 2013: 33 et seq.).

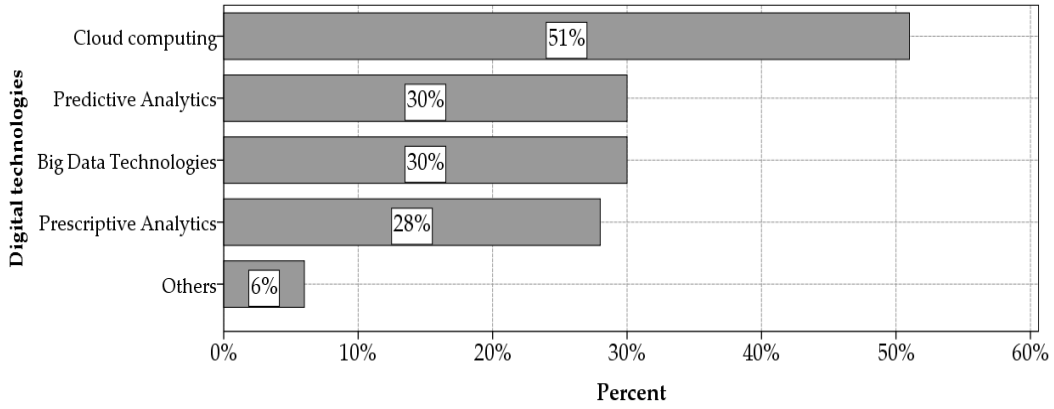
Thus, the assumptions made in Chapter 6.1 that the management accountant should change his role or his way of thinking, which includes the power of persuasion and the ability to accompany enterprise management, can thus be confirmed by these results. As for the result regarding the role of a controller, it can be realized that 24 percent of the SMEs surveyed stated that the role model of a management accountant will change to that of a controller (Weber et al. 2000: 184 et seq.) in the course of the digital transformation (Accenture 2018). At this stage, it is useful to explain that the German terminology controller (Krause et al. 2001: 29; Peemöller 1990: 31) is often used as a synonym for the role of a management accountant and was thus used in this survey to simplify this answer option for the German SMEs surveyed. In the illustration given to the surveyed SMEs, the function of the controller (Weber et al. 2000: 184 et seq.) was represented as the first digital maturity level, which means that, in this case, the degree of digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) within management accounting is little or non-existent. Nevertheless, 24 percent of the participants stated that digital transformation (Accenture 2018) emphasizes the role of the controller (Weber et al. 2000: 184 et seq.).

In addition, 12 percent of the SMEs surveyed stated that the future role model of the management accountant corresponds to that of a business partner (Sesler et al. 2020: 4 et seq.) in the light of digital transformation (Accenture 2018). At first sight, this result seems to be little. On closer examination, however, the result of 12 percent seems to make sense on account of the illustration given in Chapter 6.1 (see Figure 11). According to the illustration given, the role of the business partner (Sesler et al. 2020: 4 et seq.) represents the highest level, and based on the result of 12 percent, it can be assumed that only a few of the SMEs surveyed consider the role of management accountants in their enterprise mature enough to represent the final phase. In this respect, in the final phase, for instance, the management accountant would be presented as a business partner (Sesler et al. 2020: 4 et seq.) for the enterprise management, who would also be able to offer competent strategic advice (Menzel et al. 2011: 93 et seq.). Furthermore, this question was about the role model of the management accountant in the light of digital transformation that is associated with change (Eschenbach et al. 2019: 147), and this has led to the vast majority of participants finding the role of a change manager (Eschenbach et al. 2019: 147) more convenient.

Furthermore, regarding digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.), it was important to question which technologies (BMWi 2017: 4 et seq.; KPMG 2018: 5 et seq.; Accenture 2018) are used by the surveyed SMEs within management accounting that can be associated with digital transformation (BMWi 2017: 4 et seq.; KPMG 2018: 5 et seq.; Accenture 2018). Participants were thus asked to answer the following question.

Question 9-20: Which technologies do you use in management accounting in connection with digital transformation?

Figure 37: Digital technologies used in connection with digital transformation.



Source: Own depiction

More than half of the respondents (51 percent) stated that they use cloud-based computing (BMWi 2017: 4 et seq.) for management accounting. Regarding the other results on this question, it is clear that one-third of the participants used solutions such as predictive analytics, Big Data technologies, and prescriptive analytics (KPMG 2018: 5 et seq.; Accenture 2018) that can be assigned to statistical applications.

Thus, 30 percent of the enterprises surveyed used predictive analytics (KPMG 2018: 5 et seq.), another 30 percent used Big Data technologies, and another 28 percent worked with prescriptive analytics (Accenture 2018). In addition, 6 percent of the enterprises surveyed said that they use other technologies within management accounting that may be related to digital transformation (Keimer et al. 2020: 2 et seq.).

The present results reflect the assumptions and orientations that were made, for instance, in Chapter 4.3.2 (BMWi 2017: 4 et seq.). In Chapter 4.3.2, it was shown that the use of cloud-based computing can be the first step for enterprises, including SMEs, to take part in digital transformation (BMWi 2017: 4 et seq.). SMEs can take advantage of cloud computing by that they use it for communication with their stakeholders. Thus, the result of 51 percent shows that some SMEs have recognized the importance of using cloud computing (BMWi 2017: 4 et seq.).

The result of the second answer option, which involves predictive analytics, confirms the study results of KPMG (2018: 5 et seq.), which was shown in Chapter 4.4.3. In this respect, the KPMG study shows that SMEs make use of predictive analytics and, as a result, are also able to benefit from a more precise corporate planning (KPMG 2018: 5 et seq.). The results of this study show that one-third of the SMEs surveyed stated that they also use predictive analytics forecasting (KPMG 2018: 5 et seq.) and can thus take advantage of the benefits.

As discussed in Chapter 6.1, digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) is contributing to changes, including change in the role model of management accountants (Eschenbach et al. 2019: 147). Thus, management accountants are expected to process Big Data. The result of this question shows that 30 percent already used Big Data, for example, to run statistical applications. The application of prescriptive analytics, often considered the last phase of business analysis (Accenture 2018), is used by 28 percent of the SMEs surveyed. Prescriptive analytics analyzes how measures affect results and how service partners such as Business Process Outsourcers (BPOs) like Accenture (2018) make use of them (Accenture 2018). As explained in Chapter 6.4, Accenture (2018) offers its services for SMEs in view of prescriptive analytics and can thus provide recommendations for enterprise management (Accenture 2018).

The result of 28 percent could be an indication that the SMEs surveyed used service partners to benefit from their expertise in the field of prescriptive analytics (Accenture 2018). Furthermore, 6 percent of the SMEs surveyed stated that they use other technologies related to digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.), which is a small result in the light of increasing digital transformation (Kessler et al. 2019: 87 et seq.).

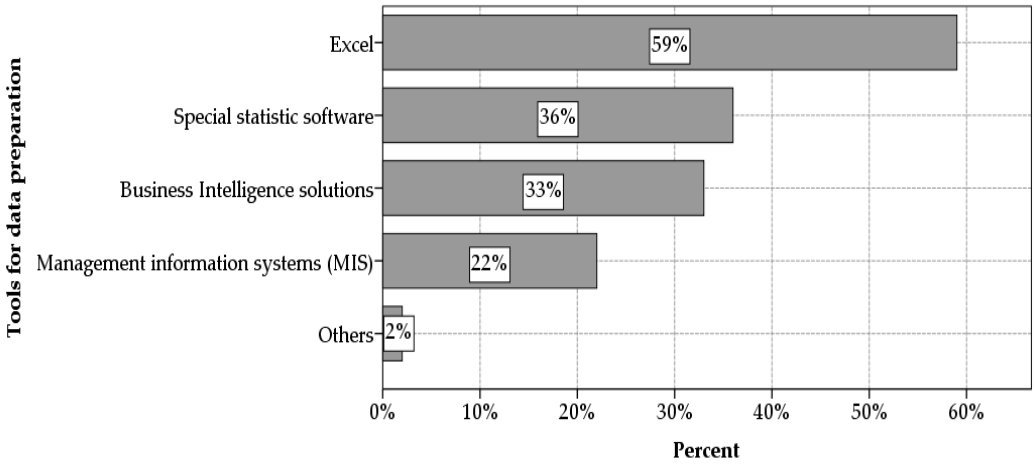
Moreover, participants were asked to indicate which tools they use for data preparation in management accounting (Zimmermann 2001: 10; Jung 2011: 5 et

seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) to support management decision-making. The purpose of this question was to identify technological progress within management accounting of the SMEs surveyed.

The following question was therefore posed to the participants.

Question 9-21: What tools do you use for preparing data for the management?

Figure 38: Tools for data preparation to support the management.



Source: Own depiction

The results show that 59 percent of the enterprises surveyed used the spreadsheet calculation program Excel. This result differs considerably from the other results of this question. However, the result of 59 percent is very similar to the study result of Diamant (2017). Diamant (2017) conducted a study with SMEs in 2017 and investigated the degree of digital transformation strategies (see Chapter 4.4.2). They further asked the participants which tool is the most used within management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.). Their results showed that Excel is still used to 50 percent within management accounting to support the decision-making process of enterprise management (Diamant 2017). Thus, the results of both studies show that SMEs still use Excel as their preferred tool when it comes to providing data for the enterprise management. In addition,

the results of this question show that 36 percent of the surveyed SMEs used special computer software for analysis and statistics (Brosius 2013: 438). These are statistical programs such as R and SPSS, while SPSS is one of the oldest statistical programs used by enterprises since the 1960s, and R is a statistical program developed and used since the early 1990s.

Business Intelligence solutions were also used by 33 percent of the enterprises surveyed. At this point, it is useful to refer once again to the study carried out by Diamant in 2017 (see Chapter 4.4.2). The Diamant study (2017) also investigated the use of Business Intelligence solutions (Diamant 2017). The result shows that 13 percent of the SMEs surveyed by Diamant used Business Intelligence solutions (Diamant 2017). This result is much lower compared to the current study. It can be assumed that the same criteria were not used in both studies to analyze SMEs. Anyway, the use of tools for data preparation such as Business Intelligence solutions shows a significant increase compared to the two studies, which are also not far apart in time. Other findings, which include the use of management information systems (Pleitner 1989: 446), show that 22 percent of the SMEs surveyed made use of them. In this respect, the use of such tools was analyzed in Chapter 3.1.1. Management information systems (MIS) are integrated computer-supported management information systems that help to support the supply of information, forecasting, and trend evaluation (Pleitner 1989: 446).

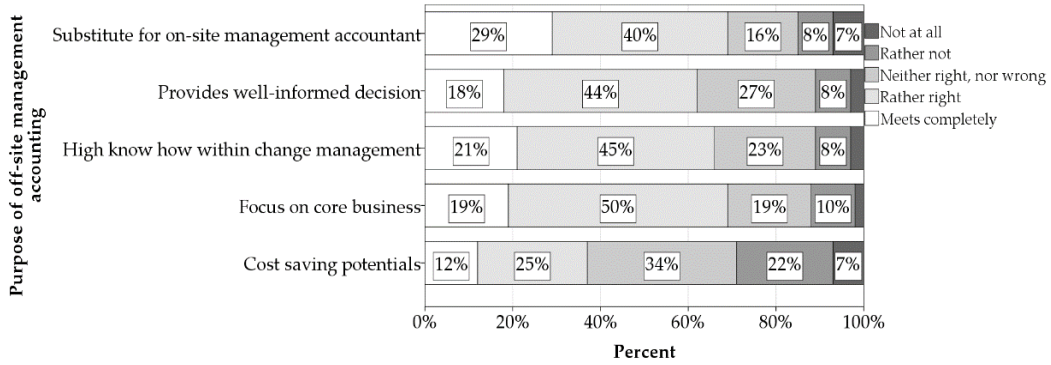
Although there were concerns in the late 1980s from scientists like Pleitner (1989: 446), these tools are still used in practice. This can be realized by this study result, even if they are not used as much as Excel or other tools like the special statistical software and Business Intelligence solutions. Thus, the assumption made in Chapter 3.1.1 that this tool (Pleitner 1989: 446) has been used for many years can be confirmed by this study result. Finally, a small number of participants, 2 percent, indicated that they use other tools for data preparation within management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.).

Since the outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) of management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) is basically the topic of this work, the focus is on the creation of off-site management accounting (Horak 1995: 128; Pössl 1991: 60), which can be advanced by enablers such as digital transformation (Kessler et al. 2019: 87 et seq.).

Comments on enterprise size, cost efficiency, focus on core business, change management, and decision-making were provided to help explore the attitudes of the surveyed SMEs toward the creation of off-site management accounting (Horak 1995: 128; Pössl 1991: 60). For this purpose, the participants were asked to comment on the following statements.

Question 9-22: Off-site management accounting is useful if enterprise size does not provide a basis for own management accountants, it provides the basis for good decision making, it offers a high level of expertise in change management, it allows concentration on the core business and it offers cost savings potential.

Figure 39: Purpose of off-site management accounting.



Source: Own depiction

A summary of the first two possible answers shows that about two-thirds of the participants stated that the comments made for the purposes of off-site management accounting (Horak 1995: 128; Pössl 1991: 60) meet completely or are rather right, except for the statement that the purpose of off-site management accounting (Horak 1995: 128; Pössl 1991: 60) is to save costs. About one-third (37 percent) of the participants agreed with this statement.

In this respect, in addition to the statement that off-site management accounting (Horak 1995: 128; Pössl 1991: 60) contributes to the concentration on the core business (Knop 2009: 14; Lohr 2012: 35 et seg.; Becker et al. 2014: 66), the statement that off-site management accounting (Horak 1995: 128; Pössl 1991: 60) can be used as a substitute for on-site management accountants (Mistlberger 2004: 297 et seq.) was rated as most correct by the SMEs surveyed. Both results show an equal 69 percent. For other results, it can be seen that the participants rated the

statement that off-site management accounting (Horak 1995: 128; Pössl 1991: 60) provides the basis for well-informed decisions (Urigshardt et al. 2008: 1 et seq.) at 62 percent. This result is followed by the result regarding the statement that off-site management accounting (Horak 1995: 128; Pössl 1991: 60) offers a high level of know-how (Horak 1995: 128) when enterprises carry out organizational changes, which amounted to 66 percent.

The statement about the possibility of saving costs was rated the least in percentage terms, namely 37 percent. Due to this lower rating, it can be assumed that 37 percent of the SMEs surveyed did not consider the savings opportunities offered by off-site management accounting (Horak 1995: 128; Pössl 1991: 60) to be the main purpose (Sierke et al. 2015: 23 et seq.) of realizing off-site management accounting (Horak 1995: 128; Pössl 1991: 60). This result confirms the assumption made in Chapter 3.2.4, which pointed out that off-site management accounting (Horak 1995: 128; Pössl 1991: 60) has less to do with cost savings, however, with providing qualified data and figures so that enterprise management can make good decisions (Sierke et al. 2015: 23 et seq.). Moreover, in Chapter 3.2.2, off-site management accounting (Horak 1995: 128; Horváth et al. 2014: 47 et seq.) was considered as a means by which the management can be advised (Urigshardt et al. 2008: 1 et seq.; Horváth et al. 2014: 47 et seq.), and the results of the above questions, which reflect the mindset of the SMEs surveyed, suggest that more than a third recognized the importance of the quality of data supply (Sierke et al. 2015: 23 et seq.).

Regarding the other findings, which included the statement that off-site management accounting (Horak 1995: 128; Pössl 1991: 60) can be regarded as a substitute for on-site management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149) and which is rated highest at 69 percent, reference can be made here to Chapter 3.2.1, which reflects the views of scientists such as Klett et al. (2010: 6). According to Klett et al. (2010: 6), the establishment of an on-site management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149) seems to be less profitable in small enterprises (Klett et al. 2010: 6), which in turn can mean referring to service partners who are familiar with management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.). This view from Klett et al. (2010: 6) was confirmed by this result. Whether 69 percent of all SMEs surveyed meet the size criterion according to IFM (2017) and the European

Commission (EC) (Becker 2008: 4 et seq.) should not be the focus of attention here. Even other scientists such as Kummert (2004: 162), as cited in Chapter 3.2.1, consider on-site management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149) to be less advantageous and weak, due to the lack of know-how in management accounting, whoever may be involved in management accounting functions (Kummert 2004: 162).

Regarding the outcome of the second answer option, which is about providing well-informed decisions (Urigshardt et al. 2008: 1 et seq.), it can be concluded that the assumptions (Urigshardt et al. 2008: 1 et seq.) made in Chapter 3.2.2 can also be confirmed. According to Urigshardt et al. (2008: 1 et seq.), off-site management accounting (Horak 1995: 128; Pössl 1991: 60) can help to provide appropriate information that in turn contributes to good enterprise management decision-making (Urigshardt et al. 2008: 1 et seq.). Even though such assumptions have been made long ago by scientists like Urigshardt et al. (2008: 1 et seq.), they are still valid today and are also gaining more importance due to challenges such as the digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.), which has been recognized by the SMEs surveyed, as 62 percent of the SMEs surveyed considered the statement to be correct. Moreover, 66 percent of respondents confirmed the purpose of off-site management accounting (Horak 1995: 128; Pössl 1991: 60) in view of providing know-how when enterprises are seeking change.

The purpose of having off-site management accounting (Horak 1995: 128; Pössl 1991: 60) contribute to focusing on the core business (Knop 2009: 14; Lohr 2012: 35 et seg.; Becker et al. 2014: 66) was confirmed by 69 percent of the participants. In this respect, for reasons of clarity, it should be stated that the creation of off-site management accounting (Horak 1995: 128; Pössl 1991: 60) is related to the outsourcing (Schewe et al. 2007: 3; Bagad 2009: 11 et seq.) of certain management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.). Thus, both options are the same for SMEs. Furthermore, as shown in Chapter 5.1, the transfer of certain tasks to service partners (Schewe et al. 2007: 2 et seq.) has been practiced for many years and is generally referred to as outsourcing (Schewe et al. 2007: 3; Bagad 2009: 11 et seq.).

As for the other possible answers such as neither right nor wrong, it can be stated that their agreement with the statements is neither positive nor negative. There are several reasons for choosing this answer option. It is possible that the

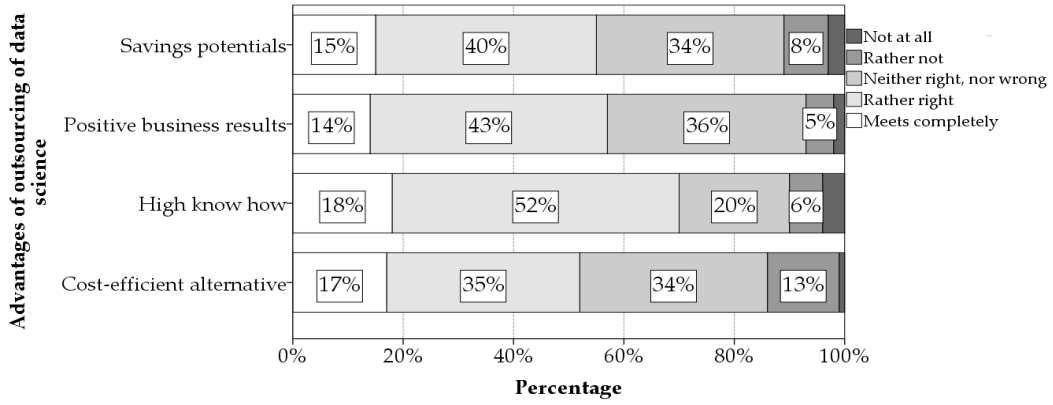
participants have no or insufficient experience with off-site management accounting (Horak 1995: 128; Pössl 1991: 60) and are therefore not yet able to assess it. They may not recognize the importance of off-site management accounting (Horak 1995: 128; Pössl 1991: 60) and therefore may not attach much importance to off-site management accounting (Horak 1995: 132; Pössl 1991: 60). Moreover, it may even be the case that their management accounting has a strong position within the enterprise, and they therefore do not want to support off-site management accounting (Horak 1995: 128; Pössl 1991: 60). Further studies will certainly be required to obtain answers to these assumptions. A further 8 percent of the SMEs surveyed stated that the statements on the purposes of an off-site management accounting (Horak 1995: 128; Pössl 1991: 60) do rather not apply, followed by 2 to 7 percent stating that the statements were even not at all applicable.

Furthermore, the participants were asked to provide their opinion on the statements in connection with data science (Horváth et al. 2014: 47 et seq.). The following question was designed to filter out the extent of the experience with data science of the SMEs surveyed.

Thus, the participants were asked to refer to the following question.

Question 9-23: Outsourcing of data science offers a high level of know-how, is cost-efficient in contrast to employing a permanent data scientist, contributes to positive business results, and offers savings potential in the training of employees, infrastructure, and information technology.

Figure 40: Advantages of data science outsourcing.



Source: Own depiction

A summary of the first two possible answer options shows that more than half of the enterprises surveyed stated that the statements meet completely or are rather right. In particular, the statements on the savings potential were rated with 55 percent, the positive business results with 57 percent, the know-how even with 70 percent, and cost-effective alternative with 52 percent.

Within these results, it is striking that the statement regarding the high level of know-how was rated most highly by the SMEs surveyed, namely, as already mentioned, 70 percent of them. Almost two-thirds associated this statement with the progress of high levels of know-how.

The result regarding the contribution of outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) of data science to saving potentials shows that 55 percent of the participants agreed with this statement. This result confirms the assumptions made in Chapter 6.2, which highlighted the importance of digital transformation (Keimer et al. 2020: 2 et seq.) and its dimensions (Gleich et al. 2016: 73 et seq.).

Data science is a part of digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.), in particular, it is the key to digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) as it contributes to better and faster data analysis, which in turn helps to save time (Horváth et al. 2014: 47 et seq.). Thus, enterprises, including SMEs, can benefit from data science expertise by outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) functions related to data science. Moreover, 57 percent of the SMEs surveyed considered the statement that outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) data science contributes to positive business results (Horváth et al. 2014: 47 et seq.) to be rather right or that it meets completely. This topic was already addressed in Chapter 6.1 by citing scientists such as Horváth et al. (2014: 47 et seq.).

According to Horváth et al. (2014: 47 et seq.), advice from off-site data scientists contribute to a high business outcome (Horváth et al. 2014: 47 et seq.). The last answer option, which states that outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) data science can be considered a cost-efficient alternative to employing a permanent data scientist, was agreed to by 52 percent of the SMEs surveyed. This result represents the lowest result and is in line with the result of Question 6-22 regarding the fact that off-site management accounting (Horak 1995: 128; Pössl 1991: 60) bears cost savings potentials, which were also rated lowest.

Furthermore, regarding the answer option neither right nor wrong, it can be realized that the statement that outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) data science offers savings potential in employees training, infrastructure, and information technology and is a cost-efficient alternative, was rated at the same percentage of 34 percent. The other answer options, such as the outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) of data science, offer positive business results and a high level of know-how, was rated with 36 percent and 20 percent, respectively. An analysis of the results for the four possible answers shows that about one-third cannot or did not want to commit themselves, while even one-fifth of the SMEs surveyed stated that they cannot or do not want to comment on the statement that outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) data science increases know-how (Accenture 2018). Regarding the possible answers rather not or not at all, it can be stated that 5 to 13 percent of the respondents found that the statements on outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) of data science are rather not applicable.

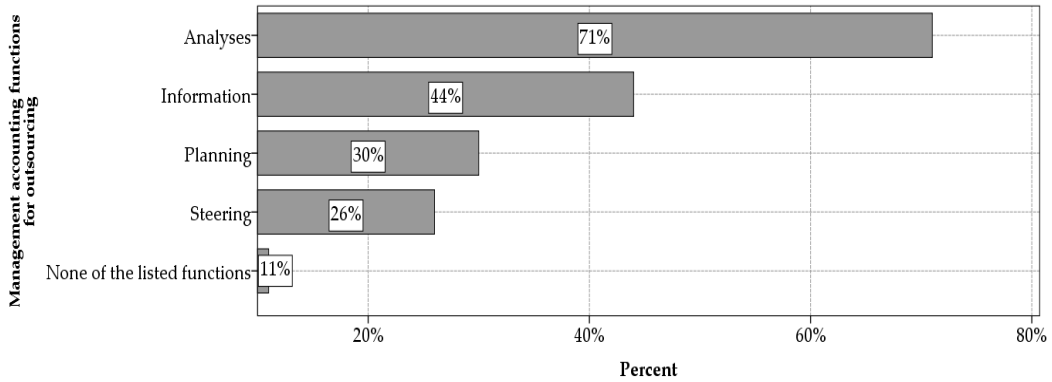
Moreover, the result of outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) data science as a cost-efficient alternative was negated by 13 percent of the SMEs surveyed, setting them apart from the other negated results. Thus, this result once again confirms the assumption that the costs are not seen as the main reason for the use of outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) measures in the field of data science by the SMEs surveyed. Moreover, 1 to 4 percent of the participants surveyed confirmed that the statements on the advantages of outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) data science are not applicable at all.

Outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) measures are generally combined with the delegation of certain functions relating to specific organizational units to service partners who specialize in this area (Schewe et al. 2007: 2 et seq). Thus, it is useful to research which management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) have already been outsourced or can be outsourced by the SMEs surveyed.

In this respect, the following question was posed to the participants.

Question 9-24: Which of the four management accounting functions have you transferred or intend to transfer to service partners?

Figure 41: Management accounting functions for outsourcing to service partners.



Source: Own depiction

The results show that 71 percent of the SMEs surveyed stated that they have outsourced or intend to outsource the management accounting function analyses (Mehlan 2007: 11; Tschandl 2012: 16) to service partners, followed by the management accounting function information (Mehlan 2007: 11; Tschandl 2012: 16) with 44 percent. The management accounting function planning (Mehlan 2007: 11; Tschandl 2012: 16) ranks third with 30 percent, closely followed by the fourth answer option with 26 percent, which is about the management accounting function steering (Mehlan 2007: 11; Tschandl 2012: 16) and from which it can be seen that 26 percent of the participants considered the management accounting function steering (Mehlan 2007: 11; Tschandl 2012: 16) to be less important to be outsourced compared to the other management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.). This is only one of many reasons why the SMEs surveyed tended to choose this answer option.

Another reason could be that the management accounting function steering (Mehlan 2007: 11; Tschandl 2012: 16) should remain in-house (Deloitte 2008: 7 et seq.) as it is related to the steering of the enterprise (Mehlan 2007: 11; Tschandl 2012: 16). 11 percent of the SMEs surveyed stated within the scope of this multiple answer option that they do not outsource any of the listed management accounting

functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) and do not intend to outsource them. This result thus leads to the assumption that the topic of outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) is of low priority to 11 percent of the SMEs surveyed.

In view of the result of the management accounting function analyses (Mehlan 2007: 11; Tschandl 2012: 16), it can be stated that more than two-thirds tend to outsource (Schewe et al. 2007: 2 et seq.) or have already outsourced this function. This result is very far ahead of the other results, which can be seen from the fact that the difference between this result and the second result is 27 percent for the answer option information (Mehlan 2007: 11; Tschandl 2012: 16). The difference to the answer options planning and steering becomes clearer as it is 41 percent and 45 percent, respectively.

On account of the results, it is useful to refer to the loop model of management accounting (Mehlan 2007: 11; Tschandl 2012: 16), which was presented in Chapter 3.1.2. The management accounting loop model (Mehlan 2007: 11; Tschandl 2012: 16) is represented by functions that must be executed in a certain order (Mehlan 2007: 11; Tschandl 2012: 16). Thus, within the management accounting loop model (Mehlan 2007: 11; Tschandl 2012: 16), the management accounting function analyses are in third place, however, it has been ranked first by the SMEs surveyed. In order to be able to carry out analyses (Mehlan 2007: 11; Tschandl 2012: 16), which is as stated before the third function that should be performed, well-prepared information (Kieninger et al. 2015: 5 et seq.; Hahn 2013: 186) is required in advance.

Thus, the phase of information preparation and supply to enterprise management plays an important role, which is presented by the second phase of the management accounting loop model (Mehlan 2007: 11; Tschandl 2012: 16). However, this topic was ranked second with 44 percent, far ahead of the result of the management accounting function analyses, which as previously stated, was rated with 71 percent.

Within the scope of Chapter 2.2.2, the importance of an adequate supply of information (Tegel 2015: 132), which in turn can lead to timely decision-making (Tegel 2015: 132), has already been shown with the aid of the findings of scientists such as Tegel (2015: 132). Other scientists recognized the importance of a competent

and timely supply of information (Pleitner 1989: 446), especially for SMEs, as early as the end of the 1980s (Pleitner 1989: 446).

As shown in Chapter 3.1.1, scientists like Pleitner (1989: 446) believed that the responsibility for an adequate supply of information lies with management accounting (Pleitner 1989: 446). This is due to that when enterprise management must make difficult decisions, it needs sufficient and timely information to avoid delaying decisions (Pleitner 1989: 446). Hence, this requires a specialist, for instance, a qualified management accountant who provides good arguments for the option to be chosen. This facilitates and accelerates the decision-making process for the manager.

As far as the result of the answer option planning is concerned, 30 percent of the surveyed SMEs tended to opt for outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) the management accounting function planning (Mehlan 2007: 11; Tschandl 2012: 16) or have already outsourced this option. This result shows that there is an understanding and willingness to use expertise provided by service partners (Accenture 2018), however, this is not yet fully recognized or accepted by all SMEs surveyed. As described in Chapter 3.1.2 (Mehlan 2007: 11; Tschandl 2012: 16), the planning phase represents the first phase of the management accounting loop model (Mehlan 2007: 11; Tschandl 2012: 16) and thus should first be established by the enterprises to be able to fulfill the other functions (Mehlan 2007: 11; Tschandl 2012: 16).

Furthermore, the first phase can be characterized by the target specifications to be set and achieved (Bals et al. 2014: 9) as stated in Chapter 3.1.2. Such requirements can be an indication of the 30 percent result, which in turn could mean that enterprise management feels obliged to carry out specifications related to planning and is hence less willing to outsource this function.

Planning also includes the strategic component within the management accounting loop model (Mehlan 2007: 11; Tschandl 2012: 16; 2010: 68 et seq.) and thus within management accounting or corporate management (Schauf 2009: 15; Menzel et al. 2011: 93 et seq.; Behrends et al. 2005: 17; Immerschitt et al. 2014: 29). This fact could be a further indication that 30 percent of the SMEs surveyed do not intend to outsource it. All these facts and considerations could have influenced the result of 30 percent. However, such considerations are close to those of Behrends et al. (2005: 17).

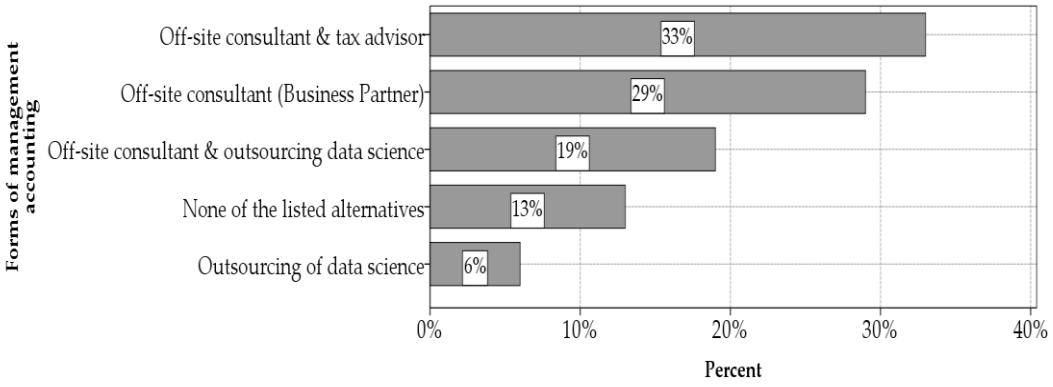
As shown in Chapter 2.2.2.2, according to Behrends et al., SMEs often disregard strategic activities, although strategic activities can be considered an important part of corporate management (Behrends et al. 2005: 17).

In connection with the topic of outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) within SMEs, it is useful to question what ideas the surveyed SMEs have regarding the strategic and organizational form of their management accounting.

Thus, the following question should be used to examine the participants' attitudes toward the form of organization, which ideally should be an off-site management accounting (Horak 1995: 128; Pössl 1991: 60). The aim of this extended question, which can be seen from that it questions both the current and the intended organizational form of an off-site management accounting (Horak 1995: 128; Pössl 1991: 60), was also to explore the view of the SMEs surveyed of an off-site management accounting (Horak 1995: 128; Pössl 1991: 60) that combines two different functions.

Question 9-25: Which alternative of management accounting will you probably choose, or have you decided on?

Figure 42: Alternative forms of management accounting.



Source: Own depiction

As a result of this question, it can be assumed that the surveyed SMEs have recognized the need for off-site management accounting (Horak 1995: 128; Pössl 1991: 60), which can be implemented in different ways. One-third (33 percent) of

the SMEs surveyed opted for the organizational form of an off-site management accounting (Horak 1995: 128; Pössl 1991: 60) in combination with a tax advisor (Ossadnik et al. 2010: 44). This result reflects the assumptions described in Chapter 3.2.4 in so far as it confirms that SMEs often turn to their tax advisor (Ossadnik et al. 2010: 44) when it comes to obtaining support in business matters (Ossadnik et al. 2010: 44).

It should be noted, however, that most of the answer options involve a combination of two roles and are therefore different from the traditional organizational form of management accounting (Mistlberger 2004: 297 et seq.; Ossadnik et al. 2010: 44). The scenario regarding the outcome of the first answer option would indeed be the contracting of two independent consultants, while the tax advisor (Ossadnik et al. 2010: 44) would support the off-site management accounting consultant. At this point, it is useful to emphasize that the SMEs surveyed were given a detailed picture of all possible answer options or organizational forms. Finally, regarding this result, it should be noted that the traditional part represented by the tax advisor (Ossadnik et al. 2010: 44) is maintained or should be maintained.

The result in relation to the second answer option, which involves an off-site management accounting (Horak 1995: 128; Pössl 1991: 60) that is only represented by an off-site business partner (Accenture 2018), showed 29 percent. This result differs only slightly from the highest result, which was 33 percent, and which is an off-site management accounting (Horak 1995: 128; Pössl 1991: 60) in combination with a tax advisor (Ossadnik et al. 2010: 44). Regarding this second result, it can also be noted that 29 percent of the SMEs surveyed had a certain willingness to collaborate with off-site management accounting consultants who act as a business partner (KPMG 2018: 5 et seq.).

The participants also had the opportunity to choose the answer option that offers the possibility of an off-site management accounting consultant in combination with the outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) of data science tasks. As a result, 19 percent of the SMEs surveyed opted for this answer, which is basically about a fifth of the respondents.

As already shown in Chapter 6.4, practice shows that the know-how of off-site management accounting consultants in combination with data science know-how is absolutely necessary (Accenture 2018). Most of the SMEs surveyed did not

seem to recognize this and were thus far from realizing this option unless they had this know-how available internally and thus had not preferred the option of off-site management accounting (Horak 1995: 128; Pössl 1991: 60) in combination with data science.

The fourth answer option was related to the statement that none of the alternatives listed was being considered. This answer option was selected by 13 percent of the SMEs surveyed. The reason for choosing this answer option can only be speculative at this point. It may depend on various factors such as enterprise size, corporate strategy, costs, and benefits as well as ideas other than those listed here.

Regarding the fifth answer option, which deals with the possibility of outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) tasks related to data science (Horváth et al. 2014: 47 et seq.), it can be noted that 6 percent of the enterprises surveyed tended to consider this option as suitable.

Although the primary task of a data scientist (Horváth et al. 2014: 47 et seq.) is to advise the enterprise management with the aid of previously selected and prepared data, the possibility of outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) the function of a data scientist (Horváth et al. 2014: 47 et seq.) was not given enough attention by the enterprises surveyed. Various reasons may have led to this result. One of the reasons for this could be the high requirements in view of competencies (Stockinger et al. 2016: 59 et seq.). As discussed in Chapter 6.1, the function of a data scientist requires a university degree combined with an analytical and conceptual mindset (Stockinger et al. 2016: 59 et seq.).

However, here it should be noted that this university degree (Planung & Analyse 2016) has been offered by several German universities since 2016 (Planung & Analyse 2016). It is therefore not yet offered to the extent that it should be in view of the digital transformation (Keimer et al. 2020: 2 et seq.) and environmental influences. One consequence of this could be that only a few enterprises are familiar with the tasks of data scientists (Horváth et al. 2014: 47 et seq.). Nor is it apparent at first sight what is hidden behind this job title. The SMEs surveyed may have made this selection for these reasons.

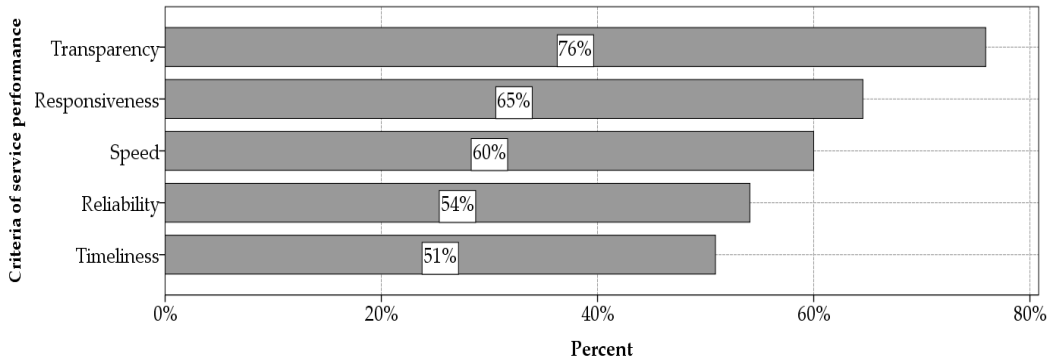
Moreover, it was of great interest to investigate which criteria of performance are used by the surveyed SMEs when selecting contractors and service partners

whose performance includes the role of an off-site management accounting consultant.

In order to investigate this, the participants were asked to comment on the following question.

Question 9-26: What criteria do you use to select off-site management accounting consultants?

Figure 43: Criteria for off-site management accounting consultants.



Source: Own depiction

The results regarding the criteria determination as a basis for the mandating of off-site management accounting consultants show that more than two-thirds (76 percent) attached great importance to transparency (Urigshardt et al. 2008: 1 et seq.) when selecting an off-site management accounting consultant. This result is not surprising as the issue of transparency (Urigshardt et al. 2008: 1 et seq.) has already been addressed in Chapter 3.2.2. At this point, it is useful to point out the importance of a trustful collaboration (Urigshardt et al. 2008: 1 et seq.) between off-site management accounting consultants and enterprise management, which ideally should be characterized by mutual transparency (Urigshardt et al. 2008: 1 et seq.).

However, as shown in Chapter 3.2.2, there are scientists like Urigshardt et al. (2008: 1 et seq.) who consider the topic of transparency (Urigshardt et al. 2008: 1 et seq.) to be problematic and express concerns when it comes to collaborating with off-site management accounting consultants. Today, 12 years later, the result of this survey question shows that transparency (Urigshardt et al. 2008: 1 et seq.) still plays a very important and the highest role within this question. Even if this is the case,

the result of the first possible answer should not necessarily confirm the concerns of Urigshardt et al. (2008: 1 et seq.), however, serve as a guiding principle.

The second possible answer refers to criterion responsiveness. At this stage, it is useful to briefly explain what is meant by responsiveness (Reis et al. 2004: 201 et seq.; Gable et al. 2006: 211 et seq.). Responsiveness (Reis et al. 2004: 201 et seq.; Gable et al. 2006: 211 et seq.) is the ability to perceive stakeholder needs (Reis et al. 2004: 201 et seq.; Gable et al. 2006: 211 et seq.). Moreover, it is about the potential to listen exactly (Reis et al. 2004: 201 et seq.; Gable et al. 2006: 211 et seq.) to what stakeholders need and discuss the best way to implement projects. It is also about the expertise to recognize changes and challenges early on. In particular, it is of great importance to have the competence to recognize the signals (Reis et al. 2004: 201 et seq.; Gable et al. 2006: 211 et seq.) stakeholders are sending and, moreover, to understand how stakeholders expect the data to be prepared. Taking these factors into account, the result of the second answer option with 65 percent seems reasonable, as such factors can be considered as success factors when it comes to collaborating with off-site management accounting consultants (Horak 1995: 128; Accenture 2018), as they can meet suchlike requirements instead of the company manager. It is also about showing a high degree of know-how and soft skills on the part of off-site management accounting consultants. In this respect, the success factors have already been discussed in Chapter 3.2.2 (Horak 1995: 128 et seq.), in which the expectations placed on off-site management accounting consultants were mentioned. As a result, off-site management accounting consultants are expected to change words for deeds and thus to act in the customer's (here SMEs) best interests (Horak 1995: 128 et seq.). In this respect, scientists like Horak (Horak 1995: 128 et seq.) emphasized that off-site management accounting consultants have the expertise to recognize changes and challenges early on (Horak 1995: 128 et seq.) and thus can take the necessary steps to ensure the security of the enterprise (Horak 1995: 128 et seq.).

Regarding the third answer option, which deals with the speed (Krcmar 2018: 5) criterion, it can be noted that this is also considered important and was thus selected by 60 percent of the SMEs surveyed. It can be assumed that such expectations are the result of high levels of competitiveness and pressure to perform (Krcmar 2018: 5), and for this reason, it can be concluded that the speed (Krcmar 2018: 5) criterion has produced a high result. Since it can be assumed that

most consultants work with the latest tools, they are expected to respond appropriately and quickly (Krcmar 2018: 5). Such requirements were already considered in Chapter 6.2 by stating that scientists like Heimel et al. assume that tools such as clouds can help off-site management accounting consultants to communicate quickly and moreover cost-effectively (Heimel et al. 2019: 402).

In view of the criterion reliability (Urigshardt et al. 2008: 1 et seq.), it can be stated that at 54 percent, it is in fourth place among the SMEs surveyed. For the present survey, reliability is equated with attributes such as trustworthiness, loyalty, confidence, and responsibility (Lühr 2001: 98; Urigshardt et al. 2008: 1 et seq.). As was shown in Chapter 3.2.2, such criteria of attributes (Urigshardt et al. 2008: 1 et seq.) play an important role in the collaboration with off-site management accounting consultants (Horak 1995: 128; Accenture 2018), which are also regarded as one of the decisive factors (Urigshardt et al. 2008: 1 et seq.) for the creation of off-site management accounting (Urigshardt et al. 2008: 1 et seq.). Such requirements have also been addressed in Chapter 3.2.4, where it was shown that other scientists such as Lühr (2001: 98) also consider criteria such as confidence (Lühr 2001: 98) to be important to ensure a trustful collaboration between enterprise management and off-site management accounting consultants (Lühr 2001: 98).

The last criterion within this survey was timeliness and was rated at 51 percent. In this respect, timeliness is related to data availability. The success of business results often depends on timely data, and timeliness plays a major role here. Moreover, the timeliness of the information in connection with the collaboration with off-site management accounting consultants can be considered a success factor as it provides the basis for optimal decision-making. The necessity for timeliness (Tegel 2015: 132; Seufert 2014: 33) was discussed in Chapter 2.2.2 by citing scientists such as Tegel and Seufert (2015: 132; 2014: 33). In this respect, Tegel and Seufert have analyzed the supply of information by management accountants and find in their analyses that enterprise management has difficulties in making timely and efficient decisions due to timeliness and lack of experienced employees (Tegel 2015: 132; Seufert 2014: 33). However, the topic of timeliness (Tegel 2015: 132) should also be considered within the scope of digital transformation (Keimer et al. 2020: 2 et seq.; Kessler et al. 2019: 87 et seq.) as shown in Chapter 6.1. Digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) can and will have a particular impact on timeliness. The digital transformation (Albrecht 2015: 3;

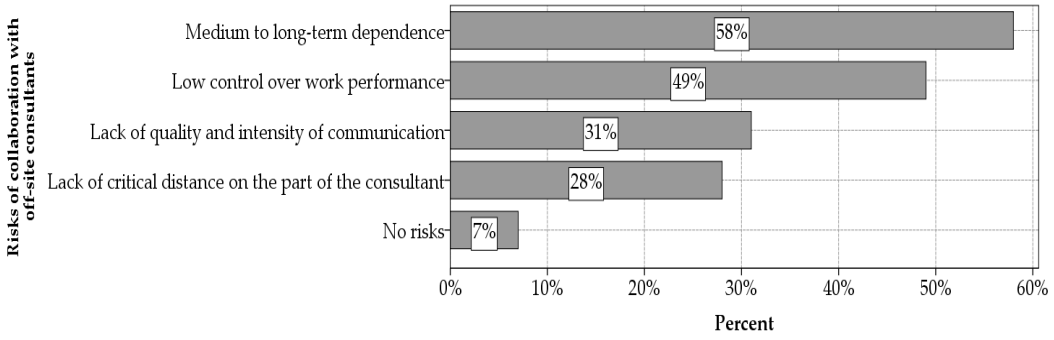
Kugler et al. 2018: 1 et seq.) is predestined to provide the basis for the timely supply of information (Tegel 2015: 132) that enterprises, including SMEs, can take advantage of and thus accelerate their decision-making (Kieninger et al. 2015: 5 et seq.).

Certainly, enterprises are considering other aspects when it comes to collaborating with off-site management accounting consultants. This includes not only the benefits of collaboration but also the risks.

The following question was therefore used to explore the risks according to the SMEs surveyed.

Question 9-27: What are the risks involved in working with off-site management accounting consultants?

Figure 44: Risks of collaboration with off-site management accounting consultants.



Source: Own depiction

For this question, the surveyed SMEs had the possibility to choose from several answers. The results show that 58 percent of the participants assessed dependence as a risk and thus chose the criterion medium to long-term dependence in the first place. Thus, it is not unreasonable to believe that off-site management accounting consultants can lead to dependence (Becker et al. 2006: 439).

After all, enterprise management often tends to make decisions on its own, without always involving anyone from the enterprise or family members or without involving off-site management accounting consultants (Becker et al. 2006: 439). In this respect, as shown in Chapter 3.2.2, the topic of interference of off-site management accounting consultants in business activities was already analyzed in the early 1990s by scientists such as Weber (1993: 9), who found that interference

could be a possible reason for not referring to off-site management accounting consultants (Weber 1993: 9). Scientists such as Becker et al. (2006: 439) show similar results, as stated in Chapter 3.2.2. Their results show that enterprises often have an attitude of restraint toward off-site management accounting consultants due to dependency (Becker et al. 2006: 439). This attitude is basically confirmed by the study carried out.

There are studies by Carey et al. (2016: 307), which reveal the enterprise management's readiness to accept support from service partners (Accenture 2018) provided the management can give credence to them (Carey et al. 2016: 307), as shown in Chapter 3.2.2. In the end, the topic of trust is highly relevant when it comes to collaborating with off-site management accounting consultants.

The second answer option, which concerns the low level of control (Wenninger 2003: 15) over the work performance of the off-site management accounting consultant, shows that 49 percent of the SMEs surveyed were skeptical about the creation of off-site management accounting (Horak 1995: 128; Pössl 1991: 60). There is certainly no denying that enterprises, including SMEs, are subject to a certain degree of dependence when they collaborate with service partners, however, there are ways of minimizing risks. In this respect, science has always attempted to analyze such issues and find solutions.

In this respect, as shown in Chapter 7.1.1, there are scientists like Wenninger (2003: 15) who consider it appropriate to implement monitoring systems (Wenninger 2003: 15) in order to have control over the work performance as a result of opportunistic behavior (Wenninger 2003: 15) from off-site management accounting consultants. However, he limits the scope of such possibilities by stating that they often fail due to the costs (Wenninger 2003: 15).

Regarding the third answer option, 31 percent of the SMEs surveyed considered the risk regarding the lack of quality and intensity of communication (Bennett et al. 2000: 814) to be lower than the risks mentioned before. This view is supported by scientists like Bennett et al. (2000: 814). As shown in Chapter 3.2.4, scientists like Bennett et al. emphasized the positive aspects of off-site management accounting consultants by indicating that they regularly communicate with enterprise management through providing comprehensive advice (Bennett et al. 2000: 814).

The fact that off-site management accounting consultants perform at a high level that can be combined with high quality has been already recognized by scientists like Pietsch (2003: 178). This was pointed out in Chapter 3.2.5, which referred to Pietsch's (2003: 178) analyses. Pietsch (2003: 178) hides any risks at all by emphasizing the high quality regarding the holistic, customer-oriented service of off-site management accounting consultants (Pietsch 2003: 178). To further minimize the doubts of those who responded with 31 percent, enterprises, including SMEs, can request references of successfully completed projects.

Another possible answer was related to the lack of critical distance (Lühr 2001: 98) of the off-site management accounting consultant. This answer option was considered a potential risk by 28 percent of the SMEs surveyed. This result shows that the surveyed SMEs still fear a certain degree of interference from off-site management accounting consultants.

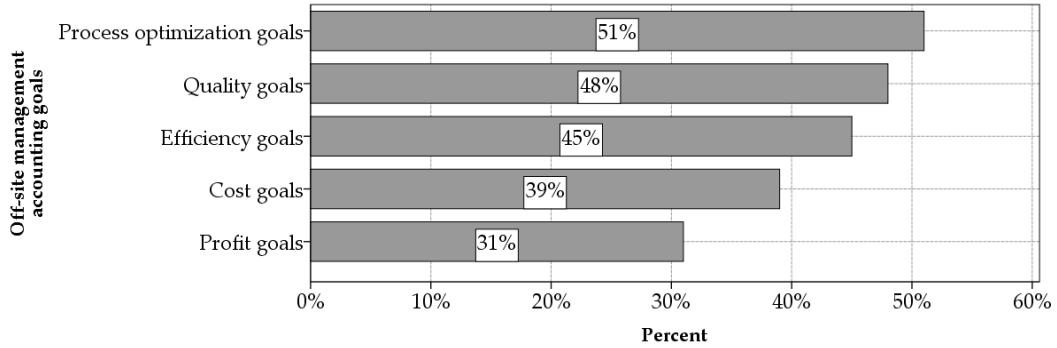
The result shows that the surveyed SMEs feel uncomfortable to a certain extent when they delegate tasks of management accounting to off-site management accounting consultants as it gives them an insight into the business (Lühr 2001: 98). This topic has already been discussed in Chapter 3.2.4 by stating the point of view of scientists like Lühr (2001: 98). According to Lühr (2001: 98), off-site management accounting consultants should keep their distance, otherwise exceeding the proximity can lead to mistrust and to enterprise management distancing itself (Lühr 2001: 98). This would jeopardize further collaboration.

In addition, 7 percent of the SMEs surveyed stated that there were no risks (Pietsch 2003: 178) involved in working with off-site management accounting consultants. This result can be an indication that they had good experiences with off-site management accounting consultants (Bühler 1995: 128) or that they are open to the idea of an off-site management accounting (Bühler 1995: 128).

There is a reason behind every organizational change, which is not always related to financial aspects. In order to investigate the reasons for implementing off-site management accounting (Horak 1995: 128; Pössl 1991: 60), the SMEs surveyed were asked to answer the following question.

Question 9-28: Please indicate the objective you are pursuing by the creation of an off-site management accounting.

Figure 45: Objective pursued by the creation of off-site management accounting.



Source: Own depiction

The participants had the opportunity to select multiple answers. The results show that 51 percent of the participants surveyed pursued process optimization goals, closely followed by the result in view of quality goals, which shows a result of 48 percent. The third answer option, which deals with efficiency goals, differs only slightly from the previous results, with a result of 45 percent. In addition, the cost aspect was ranked fourth with 39 percent, followed by the answer option that profit goals are pursued with 31 percent.

On account of the results, it can be stated that the improvement of operational methods (Kessler et al. 2019: 87 et seq.), which is represented by the first three answer options like process optimization (Schewe et al. 2007: 3), quality (Gross et al. 2006: 160; Bagad 2009: 11 et seq.), as well as efficiency (Marquardt 2003: 86), is considered a priority by the surveyed SMEs when creating off-site management accounting (Horak 1995: 128; Pössl 1991: 60). This can be seen with the aid of the first three results.

Basically, the first three results show that the vast majority of participants pursue a non-monetary objective, whereas the result of the last two answers show that there are still SMEs that pursue the aspect of monetary objectives.

However, it should be noted that the two goals may be complementary and should therefore not be considered as isolated goals. Enterprises are expected to be profit-oriented (Boucková 2015: 5 et seq.; Kralj 2004: 8) and should thus consider all measures that lead to profits and cost savings (KPMG 2018: 5 et seq.; Hummel et al. 2009: 306). Consequently, measures that help to improve processes, quality, and efficiency can contribute to achieving cost and profit goals. This issue was previously reflected in Chapter 3.2.4, and the results of this question show that there are still 39 and 31 percent, respectively, of the SMEs surveyed that considered the cost and profit factor (Hummel et al. 2009: 306) to be important. At this particular point, it is useful to take the view of scientists such as Hummel et al. (2009: 306). As cited in Chapter 3.2.5, Hummel et al. recommend off-site management accounting (Horak 1995: 128; Pössl 1991: 60) for SMEs due to cost-saving potentials (Hummel et al. 2009: 306).

In doing so, they refer, amongst others, to cost-saving potentials regarding salary costs for an on-site management accountant (Hummel et al. 2009: 306). It remains open whether the enterprises surveyed in their answers referred to cost-saving options regarding the salary for on-site management accountants or whether they considered their overall cost situation.

9.2 RESULTS OF THE INFERENCE STATISTICS

The results of the inference statistics are shown below. The results are presented and interpreted according to a uniform scheme. Thus, the alternative hypothesis to be confirmed is listed first, followed by the null hypothesis, which must generally be rejected (Eckstein 2006: 346). At this point, it is useful to note that there are cases where the alternative hypothesis must be rejected instead of the null hypothesis (Eckstein 2006: 346). However, science assumes that the relative proportion of alternative hypotheses rejected should be small compared to the cases that conform to the hypotheses (Eckstein 2006: 346). This assumption (Eckstein 2006: 346) could be maintained with the aid of the present study. Thus, only one of six alternative hypotheses was rejected. Subsequently, the independent

and dependent variables (Doering et al. 2016: 407) are listed. Furthermore, the results of the Kendall-tau-b analysis (Eckstein 2006: 346) are listed with the aid of a table containing the Kendall-tau-b result (Eckstein 2006: 346; Brosius 2013: 438), the p-value, and an indication of whether the null hypothesis must be rejected or confirmed. In order to come to a decision in this respect, the p-value is compared with the previously selected significance level of 0.05 (Sachs 2013: 96), followed by an explanation and the graphical presentation of the results. The significance level α was previously set at 0.05 (5%). Furthermore, the significance level can be used to decide whether the null hypothesis H0 (Eckstein 2006: 346) must be rejected or confirmed (Eckstein 2006: 346). If the test result is less than or equal to the significance level (Eckstein 2006: 346; Sachs 2013: 96), the null hypothesis H0 (Eckstein 2006: 346) must be rejected. In order to be able to analyze the results more precisely, three levels of significance (Sachs 2013: 96; Eckstein 2006: 346) were defined as follows:

- $p \leq 0.05$ Significant (error probability of less than 5 percent)
- $p \leq 0.01$ Very significant (error probability of less than 1 percent)
- $p \leq 0.001$ Highly significant (error probability of less than 0.1 percent)

In the following, the results for the hypotheses formulated in Chapter 7.2 are presented as follows:

The following alternative and null hypotheses (Doering et al. 2016: 407) were formulated.

9.2.1 Study results on Hypothesis H1

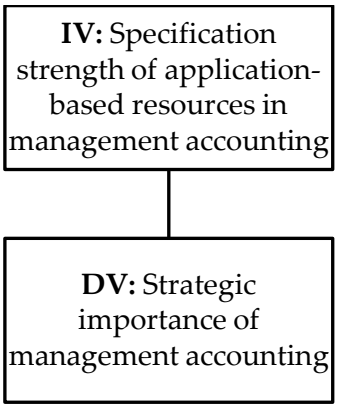
Alternative Hypothesis H1

The stronger the specification of application-based resources in management accounting, the greater the strategic importance of management accounting will be.

Null Hypothesis H0

There is no positive correlation between the specification strength of application-based resources in management accounting and the strategic importance of management accounting.

Figure 46: Variables related to the specification strength of the application-based resources and the strategic importance of management accounting.



Source: Own depiction

Hypothesis 1 (H1) was tested using the Kendall rank correlation coefficient (Eckstein 2006: 188) with the specification strength of application-based (Gleich et al. 2016: 73 et seq.) resources in management accounting as the independent variable (Doering et al. 2016: 407) and the strategic importance of management accounting (Behrends et al. 2005: 17) as the dependent variable (Doering et al. 2016: 407). The results are shown in Table 7.

Table 7: Results regarding the specification strength of application-based resources within management accounting and the strategic importance of management accounting.

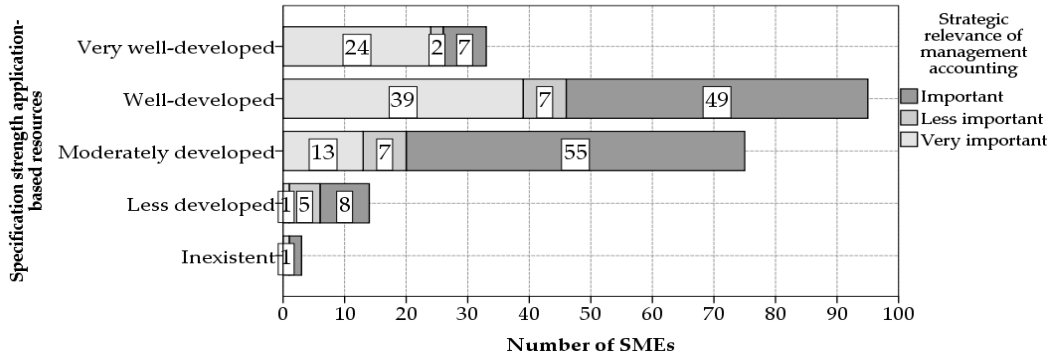
Kendall-tau-b	p-value	Null Hypothesis H0
0.347	0.000	To be rejected

Source: Own depiction

The specification strength of the application-based (Gleich et al. 2016: 73 et seq.) resources in management accounting (IV) shows statistically a highly significant correlation (Israel 2008: 111) to the strategic importance of management accounting (DV) (Müller 2014: 89), which in turn means that the stronger the specification of the application-based (Gleich et al. 2016: 73 et seq.) resources in management accounting, the higher the strategic importance of management accounting (Behrends et al. 2005: 17) is perceived by the surveyed SMEs. This can be seen from the fact that the probability value (p-value) (Anderson et al. 2007: 298) – which is the evidence measure for the credibility of the null hypothesis – is 0.000 or 0.0 percent and is thus below the significance level of 0.05 (0.000 < 0.05); hence, this small p-value strongly argues against the validity of the null hypothesis (Doering et al. 2016: 407). As a result, it is highly unlikely that there is no positive correlation (Brosius 2013: 438) between the specification strength of application-based resources in management accounting (Gleich et al. 2016: 73 et seq.) and the strategic importance of management accounting (Müller 2014: 89).

Thus, the result shows that there is a positive correlation (Brosius 2013: 438) between the specification strength of application-based resources in management accounting (Gleich et al. 2016: 73 et seq.) and the strategic importance of management accounting. This is additionally shown in the following figure.

Figure 47: Strength of specification of application-based resources in relation to the strategic importance of management accounting.



Source: Own depiction

Consequently, Hypothesis 1 (H1) must be confirmed, and the Null Hypothesis (H0) rejected. In summary, the Kendall-tau-b Test is highly significant and thus favors Hypothesis 1 (H1). This means that the stronger the specification of application-based resources in management accounting, the greater the strategic importance of management accounting will be.

9.2.2 Study results on Hypothesis H2

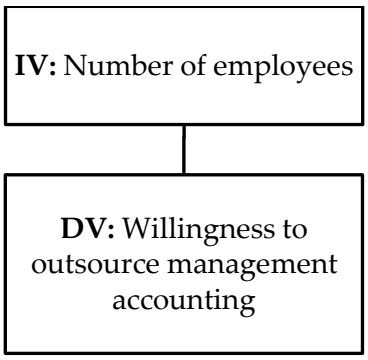
Alternative Hypothesis H2

The higher the number of employees in the enterprise, the greater the willingness to outsource management accounting.

Null Hypothesis H0

There is no positive correlation between the number of employees and the willingness to outsource management accounting.

Figure 48: Variables relating to the number of employees and willingness to outsource management accounting.



Source: Own depiction (Doering et al. 2016: 407)

Hypothesis 2 (H2) was tested using the Kendall rank correlation coefficient (Muth 2006: 447) with the number of employees (IFM 2017) as the independent variable (Doering et al. 2016: 407) and the willingness to outsource management accounting as the dependent variable (Doering et al. 2016: 407). The results are shown in Table 8.

Table 8: Results regarding the number of employees and willingness to outsource management accounting.

Kendall-tau-b	p-value	Null Hypothesis H0
0.139	0.011	To be rejected

Source: Own depiction

The number of employees (IV) statistically shows a very significant correlation (Brosius 2013: 438) to the willingness to outsource management accounting (DV), which in turn means that the higher the number of employees (IFM 2017) within the surveyed enterprise, the higher the willingness to outsource management accounting (Schewe et al. 2007: 2 et seq.).

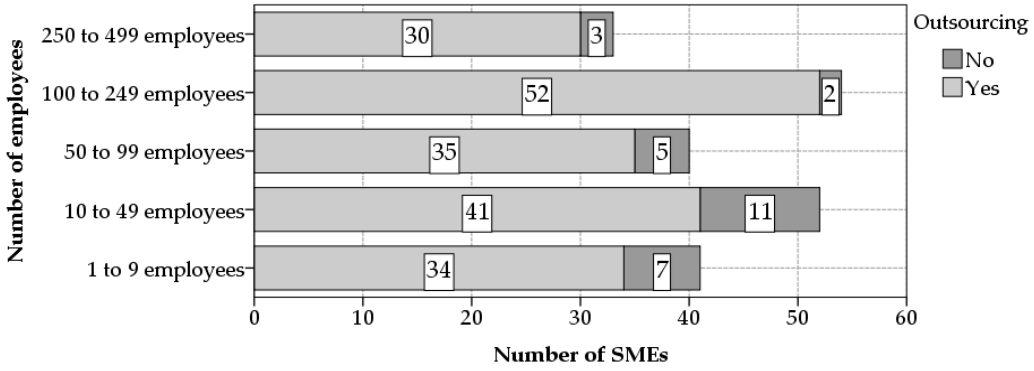
This is shown by the fact that the probability value (p-value) (Anderson et al. 2007: 298) – which is the evidence measure of the credibility of the null hypothesis (Eckstein 2006: 346) – is 0.011 or 1.1 percent, which is below the significance level of 0.05 ($0.011 < 0.05$); hence, this small p-value argues against the validity of the null hypothesis (Doering et al. 2016: 407). Thus, it is very unlikely that there is no positive correlation (Brosius 2013: 438) between the number of employees (IFM 2017) and the willingness to outsource management accounting (Schewe et al. 2007: 2 et seq.).

Thus, the result shows that there is a positive correlation (Brosius 2013: 438) between the number of employees and the willingness to outsource. This is particularly evident in cases of more than 100 to 249 employees within the surveyed SMEs, which according to the EC's definition, have the highest proportion among Germany's enterprises as shown in Chapter 2.1.2.1.

This significant result in view of the enterprise size between 100 to 249 employees is followed by the result of the enterprise size between 250 and 499, which, as described in Chapter 2.1.2.1, characterizes SMEs according to IFM's (2017) definition. At this point, it is useful to state that the results are considered taking into account the proportion of those who support and do not support outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) based on the number of employees (IFM 2017). Thus, the results show the role played by the size of the enterprise (Klett et al. 2010: 6 et seq.) in the decision to outsource (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.).

The results can be seen in the following figure.

Figure 49: Number of employees in relation to outsourcing intentions.



Source: Own depiction

Consequently, Hypothesis 2 (H2) must be confirmed, and the Null Hypothesis (H0) rejected. In summary, the Kendall-tau-b Test is very significant and thus favors Hypothesis 2 (H2). This means that the higher the number of employees (IFM 2017) in the enterprise, the greater the willingness to outsource (Schewe et al. 2007: 2 et seq.) management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.).

9.2.3 Study results on Hypothesis H3

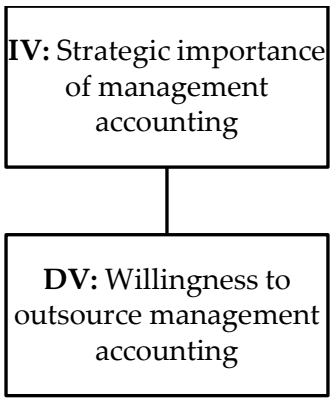
Alternative Hypothesis H3

The higher the assessment of the strategic importance of management accounting, the higher the outsourcing intentions will be.

Null hypothesis H0

There is no positive correlation between the strategic importance of management accounting and outsourcing intentions.

Figure 50: Variables regarding the strategic importance of management accounting and the willingness to outsource management accounting.



Source: Own depiction

Hypothesis 3 (H3) was tested using the Kendall rank correlation coefficient (Eckstein 2006: 188; Brosius 2013: 438) with the strategic importance of management accounting as the independent variable (Doering et al. 2016: 407) and the willingness to outsource management accounting as the dependent variable (Doering et al. 2016: 438). The results are shown in Table 9.

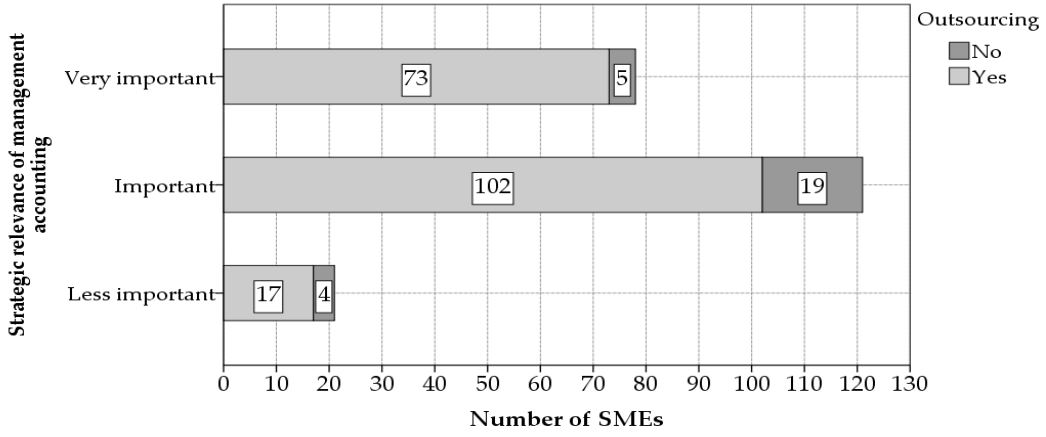
Table 9: Results regarding the strategic importance of management accounting and willingness to outsource management accounting.

Kendall-tau-b	p-value	Null Hypothesis H0
0.137	0.018	To be rejected

Source: Own depiction

The strategic importance of management accounting (IV) statistically shows a very significant correlation (Brosius 2013: 438) with the willingness to outsource management accounting (DV), which in turn means that the higher the strategic importance of management accounting (Behrends et al. 2005: 17) is assessed, the higher the willingness to outsource (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.), or the lower the proportion of unwilling to outsource (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11). Thus, there is a positive correlation (Brosius 2013: 438) between the strategic importance of management accounting and the willingness to outsource management accounting. This is shown by the fact that the probability value (p-value) (Anderson et al. 2007: 298) – which is the evidence measure of the credibility of the null hypothesis (Eckstein 2006: 346) – is 0.018 or 1.8 percent and is thus below the significance level of 0.05 (0.018 < 0.05); hence, this small p-value argues against the validity of the null hypothesis (Doering et al. 2016: 407). As a result, it is highly unlikely that there is no positive correlation (Brosius 2013: 438) between the strategic importance of management accounting and the willingness to outsource (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.). This is additionally shown in the following figure.

Figure 51: Strategic relevance of management accounting and outsourcing intentions.



Source: Own depiction

Consequently, Hypothesis 3 (H3) must be confirmed, and the Null Hypothesis (H0) rejected. In summary, the Kendall-tau-b test is very significant and thus favors Hypothesis 3 (H3). This means that the higher the assessment of the strategic importance of management accounting (Behrends et al. 2005: 17), the higher the outsourcing intentions (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) will be.

9.2.4 Study results on Hypothesis H4

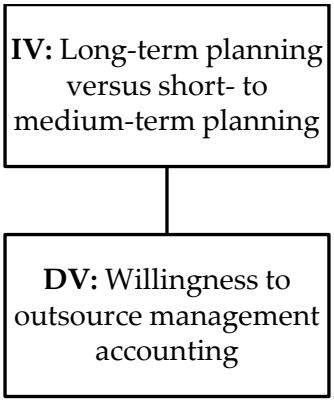
Alternative Hypothesis H4

If long-term planning is carried out instead of short- to medium-term planning, the willingness to outsource management accounting is higher.

Null Hypothesis H0

If long-term planning is carried out instead of short- to medium-term planning, the willingness to outsource management accounting is not higher.

Figure 52: Variables relating to long-term planning compared to short- to medium-term planning and the willingness to outsource management accounting.



Source: Own depiction

Hypothesis 4 (H4) was tested using the Kendall rank correlation coefficient (Eckstein 2006: 188; Brosius 2013: 438) with long-term planning compared to short- to medium-term planning as the independent variable (Doering et al. 2016: 407) and the willingness to outsource (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) as the dependent variable (Doering et al. 2016: 438). The results are shown in Table 10.

Table 10: Results regarding long-term planning in comparison to short- to medium-term planning of the management accounting and the willingness to outsource management accounting.

Kendall-tau-b	p-value	Null Hypothesis H0
0.260	0.002	To be rejected

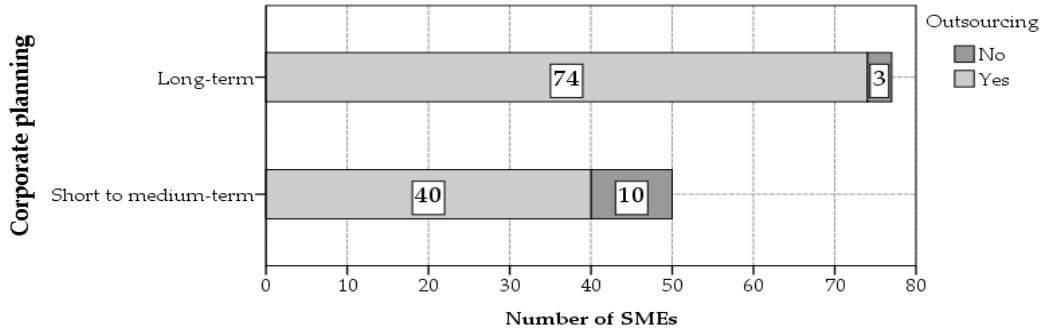
Source: Own depiction

Long-term as opposed to short- and medium-term planning (IV) statistically shows a highly significant correlation with the willingness to outsource management accounting (DV), which in turn means that the more the SMEs surveyed make use of long-term planning, the greater the willingness to outsource management accounting. Thus, there is a positive correlation (Brosius 2013: 438) between the use of long-term planning and the willingness to outsource management accounting.

This is shown by the fact that the probability value (p-value) (Anderson et al. 2007: 298) – which is the evidence measure for the credibility (Eckstein 2006: 346) of the null hypothesis – is 0.002, respectively 0.2 percent, and thus below the significance level of 0.05 ($0.002 < 0.05$); hence, this small p-value argues against the validity of the null hypothesis (Doering et al. 2016: 407).

Thus, it is highly unlikely that there is no positive correlation (Brosius 2013: 438) between the use of long-term planning and the willingness to outsource (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.). This is additionally shown in the following figure. At this stage, it is important to mention that those SMEs were considered that meet the long-term and short to medium-term criteria.

Figure 53: Corporate planning and outsourcing intentions.



Source: Own depiction

As a consequence, Hypothesis 4 (H4) must be confirmed, and the null hypothesis (H0) rejected. In summary, the Kendall-tau-b test is highly significant and thus favors Hypothesis 4 (H4). This means that if long-term planning is carried out instead of short- to medium-term planning, the willingness to outsource (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) is higher.

9.2.5 Study results on Hypothesis H5

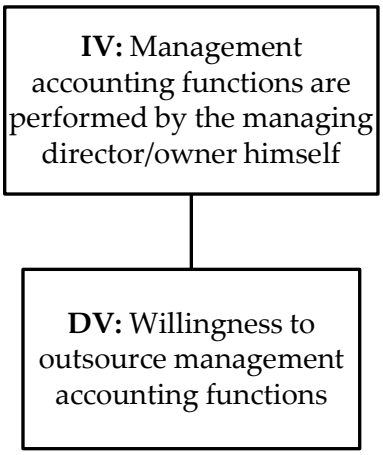
Alternative Hypothesis H5

If the management accounting functions are performed by the managing director/owner himself, the willingness to outsource management accounting is lower.

Null Hypothesis H0

If the management accounting functions are performed by the managing director/owner himself, the willingness to outsource management accounting functions is not lower.

Figure 54: Variables relating to the management accounting functions being performed by the managing director/owner and the willingness to outsource management accounting functions.



Source: Own depiction

Hypothesis 5 (H5) was tested using the Kendall rank correlation coefficient (Eckstein 2006: 188; Brosius 2013: 438) with the exercise of management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) by the managing director/owner himself (Klett et al. 2010: 6 et seq.; Tegel 2015: 132; Deloitte 2008: 7 et seq.) as the independent variable (Doering et al. 2016: 407) and the willingness to outsource management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) as the dependent variable (Doering et al. 2016: 438). The results are shown in Table 11.

Table 11: Results regarding the execution of management accounting functions by the managing director/owner himself and the willingness to outsource management accounting functions.

Kendall-tau-b	p-value	Null Hypothesis H0
-0.33	0.312	To be accepted

Source: Own depiction

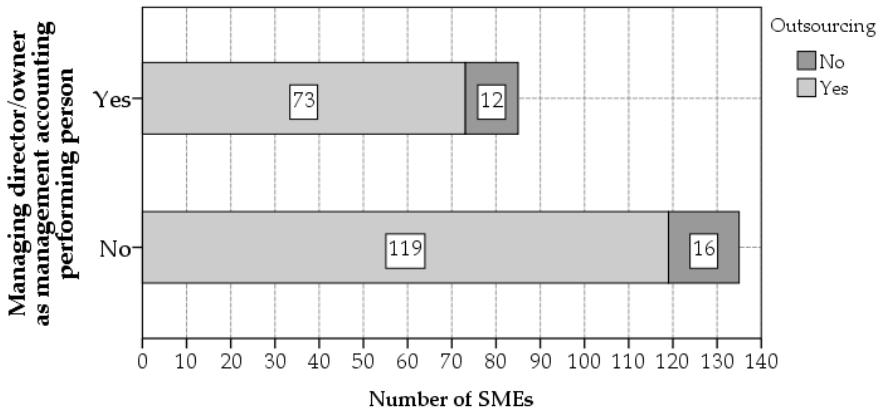
The exercise of management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) by the managing director/owner himself (IV) (Klett et al. 2010: 6 et seq.; Tegel 2015: 132; Deloitte 2008: 7 et seq.) statistically shows no correlation (Brosius 2013: 438) with the less willingness to outsource (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) management accounting functions (DV), which in turn means that the performance of management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) by the managing director or owner (Klett et al. 2010: 6 et seq.; Tegel 2015: 132; Deloitte 2008: 7 et seq.) supports the willingness to outsource management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.). This is shown by the fact that the probability value (p-value) (Anderson et al. 2007: 298) – which is the evidence measure for the credibility of the null hypothesis (Eckstein 2006: 346) – is 0.312 or 31.20 percent and is thus above the significance level of 0.05 (0.312 > 0.05); hence, this high p-value argues for the validity of the null hypothesis (Doering et al. 2016: 407).

Consequently, there is likely a positive correlation (Brosius 2013: 438) between the exercise of management accounting functions by the managing director or owner himself (Klett et al. 2010: 6 et seq.; Tegel 2015: 132; Deloitte 2008:

7 et seq.) and the willingness to outsource management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.). This is additionally shown in the following figure.

At 85 of surveyed SMEs (the total number is 220) management accounting functions are performed by the managing director or owner himself (Klett et al. 2010: 6 et seq.; Tegel 2015: 132; Deloitte 2008: 7 et seq.). 73 of these are inclined to outsource management accounting functions which represent a share of almost 86 percent.

Figure 55: Managing director or owner as management accounting performing person and outsourcing intentions.



Source: Own depiction

Consequently, Hypothesis 5 (H5) must be rejected, and the null hypothesis (H0) accepted. In summary, the Kendall-tau-b test shows no statistical significance and therefore does not favor Hypothesis 5 (H5). This means that if the management accounting functions are performed by the managing director or owner himself (Klett et al. 2010: 6 et seq.; Tegel 2015: 132; Deloitte 2008: 7 et seq.), the willingness to outsource management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) is not lower.

9.2.6 Study results on Hypothesis H6

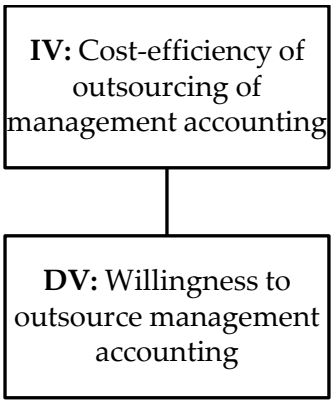
Alternative Hypothesis H6

The higher the cost-efficiency of outsourcing of management accounting compared to on-site management accounting, the greater the willingness to outsource management accounting.

Null Hypothesis H0

There is no positive correlation between the assessment of the cost-efficiency of outsourcing of management accounting and the willingness to outsource management accounting.

Figure 56: Variables related to the cost-efficiency of outsourcing of management accounting and the willingness to outsource management accounting.



Source: Own depiction

Hypothesis 6 (H6) was tested using the Kendall rank correlation coefficient (Eckstein 2006: 188; Brosius 2013: 438) with the assessment of the cost-efficiency of outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) management accounting as the independent variable (Doering et al. 2016: 407) and the willingness to outsource management accounting as the dependent variable (Doering et al. 2016: 438). The results are shown in Table 12.

Table 12: Results regarding the assessment of the cost-efficiency of outsourcing of management accounting and the willingness to outsource management accounting.

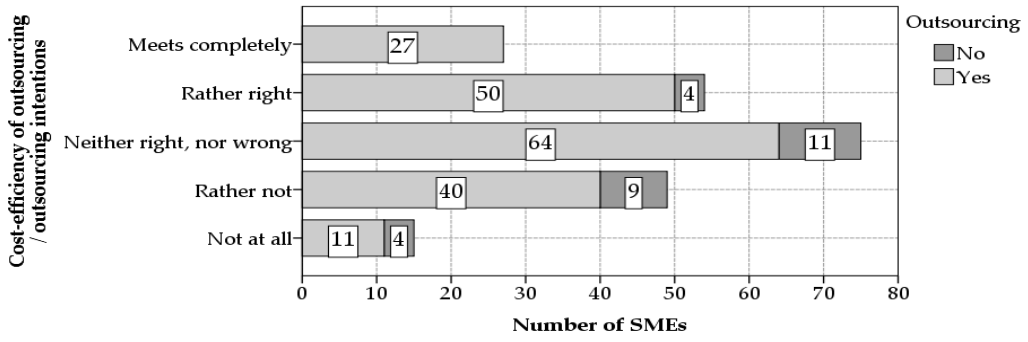
Kendall-tau-b	p-value	Null Hypothesis H0
0.185	0.001	To be rejected

Source: Own depiction

The assessment of the cost-efficiency of outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) management accounting (IV) shows a highly significant correlation with the willingness to outsource management accounting (DV), which in turn means that the more cost-efficient the outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) of management accounting, the greater the willingness to outsource management accounting. Thus, there is a positive correlation (Brosius 2013: 438) between the assessment of the cost-efficiency (Dibbern et al. 1999: 6) of outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) management accounting and the willingness to outsource management accounting. This is shown by that the probability value (p-value) – which is the evidence measure of the credibility of the null hypothesis (Eckstein 2006: 346) – is 0.001 or 0.1 percent and is thus below the significance level of 0.05 ($0.001 < 0.05$); hence, this small p-value argues against the validity of the null hypothesis (Doering et al. 2016: 407).

It is thus highly unlikely that there is no positive correlation (Brosius 2013: 438) between the cost-efficiency of outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) management accounting and the willingness to outsource management accounting. This is additionally shown in the following figure.

Figure 57: Cost-efficiency of outsourcing management accounting and outsourcing intentions.



Source: Own depiction

Consequently, Hypothesis 6 (H6) must be confirmed, and the null hypothesis (H0) rejected. In summary, the Kendall-tau-b test is highly significant and thus favors Hypothesis 6 (H6). This means that the higher the cost-efficiency (Dibbern et al. 1999: 6) of outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) of management accounting compared to on-site management accounting (Mistlberger 2004: 297 et seq.; Kenning 2003: 149), the greater the willingness to outsource management accounting.

10 CONCLUSION

This dissertation intends to answer the question of what reasons SMEs give for using off-site management accounting (Horak 1995: 128; Pössl 1991: 60). It moreover intends to examine the status quo of management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) and thus to find out the number of SMEs which have already implemented an off-site management accounting (Horak 1995: 128; Pössl 1991: 60) and to filter out deficiencies within management accounting (Klett et al. 2010: 6; Euler Hermes 2006).

In this respect, the following key findings emerge from the evaluations: It can be stated that almost half of all SMEs surveyed have already implemented off-site management accounting (Horak 1995: 128; Pössl 1991: 60), and the other half can imagine having an off-site management accounting (Horak 1995: 128; Pössl 1991: 60) within the next three years. Thus, there is considerable and untapped potential for business support (Accenture 2018), and it seems a logical conclusion that SMEs should make use of business support (Accenture 2018) provided by service partners who are familiar with management accounting (Accenture 2018). In connection with the status quo of off-site management accounting (Horak 1995: 128; Pössl 1991: 60), additional factors are considered hereinafter, which should help to justify off-site management accounting (Horak 1995: 128; Pössl 1991: 60) for SMEs that have not yet implemented it.

10.1 MANAGERIAL IMPLICATIONS AND RECOMMENDATIONS FOR ACTION

The assessed opinions and perspectives of the German SMEs are important from the practical point of view, as management accountants are expected to provide expert advice (Horak 1995: 128 et seq.) and guide enterprise management on business projects, due to stakeholder expectations and challenges such as digital transformation (Accenture 2018). However, most of the SMEs surveyed are still far

away from accepting a management accountant as a business partner (KPMG 2018: 5 et seq.; Sesler et al. 2020: 4 et seq.) at eye level.

In these times, collaboration at eye level is particularly important for the economic survival of an enterprise. The relationship level (Carey et al. 2016: 307; Weber et al. 2001: 25 et seq.) plays an important role in this. Thus, enterprises, including SMEs, should aim for a trustworthy and long-term collaboration (Kaltenbacher 2011: 78; Piezonka 2013: 13) that can be achieved through Business Process Outsourcing measures (Accenture 2018). On this basis, a contract can be concluded with the Business Process Outsourcing service partner (Accenture 2018) prior to the commencement of a business relationship, which regulates the services to achieve a trustful collaboration between both parties (Kaltenbacher 2011: 78; Piezonka 2013: 13). The determination of the status quo also includes the qualification level (Kaltenbacher 2011: 78; Piezonka 2013: 13) of the person performing the management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) within the enterprise.

In this perspective, the following can be seen from the results: There is an enormous capacity of application-based resources (Stock 2010: 52; Wojciechowska 2016: 20) since only 30 to 50 percent of the SMEs surveyed use applications that can be associated with digital transformation (Kessler et al. 2019: 87 et seq.). However, digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.) offers a variety of opportunities and chances, such as competitiveness and the ability to respond faster to customer requests. Furthermore, regarding specific skills, it can be noted that only two-thirds of specific skills such as communication skills, process-specific expertise, and advisory capacity (Knop 2009: 14; Ossadnik 2010: 44) are developed. It would certainly make more sense if these skills were much more widely available within management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) and hence among SMEs.

Thus, the vast majority believe that the deficits in application-based resources are high to very high. This shows that there is an awareness of deficiencies in management accounting (Klett et al. 2010: 6; Euler Hermes 2006) among the SMEs surveyed. The assessment of the know-how shows a similar result. Even if there are assessments to the contrary, the overall result in view of competencies (Gleich

et al. 2016: 73 et seq.; Kaltenbacher 2011: 78; Piezonka 2013: 13) can also be classified as high.

Moreover, the skills and competencies (Kaltenbacher 2011: 78; Piezonka 2013: 13) have not yet been adapted to the digital requirements. Most of the SMEs surveyed have general management accounting skills. Furthermore, one's own estimation or perception (Reis et al. 2004: 201 et seq.; Gable et al. 2006: 211 et seq.) plays an important role when it comes to assessing the status quo of management accounting (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38; Lingnau et al. 2017: 137 et seq.) of the SMEs surveyed.

The assessment also includes the existing conditions of the technologies that can be associated with digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.). In this respect, it can be stated that there are already SMEs using such technologies, but far too few (Albrecht 2015: 3). The first step toward the use of such technologies (Albrecht 2015: 3) has been taken by the surveyed SMEs, however, there is still a lot of potential for the use of technologies (Albrecht 2015: 3) that can be associated with digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.).

Concerning the existing conditions within management accounting, the topic of the analysis is of great importance since a large portion of the enterprises surveyed have outsourced this function or intend to outsource it to service partners. It can therefore be assumed that most of the SMEs surveyed need help when it comes to interpreting enterprise data (Ossadnik et al. 2010: 44) and obtaining an overview of the current enterprise situation.

Regarding the reasons for off-site management accounting (Horak 1995: 128; Pössl 1991: 60), the key findings show that the SMEs surveyed justify the outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) of management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.), which can also be carried out partially or completely, with the possibility of concentrating on the core business (Knop 2009: 14; Lohr 2012: 35 et seg.; Becker et al. 2014: 66).

In addition, the SMEs surveyed justify an off-site management accounting (Horak 1995: 128; Pössl 1991: 60) on the grounds that they can benefit from the know-how of off-site management accounting consultants when bringing about

change (Horak 1995: 129). The possibility of obtaining advice within the scope of decision-making (Tegel 2015: 132) processes is also cited by the SMEs surveyed as a reason for off-site management accounting (Horak 1995: 128; Pössl 1991: 60). In principle, however, it can be stated that know-how (Kummert 2004: 162) is the most important factor when considering the reasons for off-site management accounting (Horak 1995: 128; Pössl 1991: 60).

Cost savings are also cited by the SMEs surveyed as a reason for off-site management accounting (Horak 1995: 128; Pössl 1991: 60), however, not as a priority. Nevertheless, even if the SMEs surveyed do not consider cost-efficiency (Liebhart 2001: 79) to be one of the main reasons for outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.), they still rate it as a preference for outsourcing (Liebhart 2001: 79).

Furthermore, other factors also play a role for an off-site management accounting (Horak 1995: 128; Pössl 1991: 60) for the SMEs surveyed, including service performance. In view of the service performance, it can therefore be concluded that criteria such as transparency (Urigshardt et al. 2008: 1 et seq.), responsiveness (Reis et al. 2004: 201 et seq.), and speed (Krcmar 2018: 5) are seen as the main factors in the decision to use off-site management accounting (Horak 1995: 128; Pössl 1991: 60).

The SMEs surveyed pursue goals and are considering outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) the management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) as one way of achieving these goals. As a result, they justify the creation of off-site management accounting (Horak 1995: 128; Pössl 1991: 60) by achieving goals such as process optimization, quality, and efficiency.

Moreover, the surveyed SMEs justify off-site management accounting (Horak 1995: 128; Pössl 1991: 60) with the strategic importance of management accounting. As a result, SMEs that consider the strategic importance to be high are willing to outsource management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.).

At this point, the author considers it important to introduce a new insight gained with the aid of Hypotheses 5 (H5). For the sake of clarity, the study result of H5 will be shown again below:

Study result H5: The exercise of management accounting functions by the *managing director or owner (*IV) *himself* (Klett et al. 2010: 6 et seq.) statistically shows no correlation with the *less* willingness to outsource management accounting functions (DV), which in turn means that the performance of management accounting functions by the managing director or owner himself (Klett et al. 2010: 6 et seq.) supports the willingness to outsource management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.). In this respect, the question arises of what motivates him to outsource management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.). Thus, it is important to analyze his *personal motives/reasons* (Gable et al. 2006: 211 et seq.), which are influenced among others by his *personal cognition* (Gable et al. 2006: 211 et seq.), which is the result of, for instance, the process of perception. Due to this result, Hypothesis 5 (H5) should be considered from another point of view.

Moreover, this new aspect gained from the own research which is about managing director's or owner's cognition (Reis et al. 2004: 201 et seq.; Gable et al. 2006: 211 et seq.) is reinforced by the second answer option of Question 9-26 which is *responsiveness* (Reis et al. 2004: 201 et seq.; Gable et al. 2006: 211 et seq.), and which can also be related to the process of perception (Reis et al. 2004: 201 et seq.; Gable et al. 2006: 211 et seq.). The topic of responsiveness (Reis et al. 2004: 201 et seq.; Gable et al. 2006: 211 et seq.) has been assessed by two-thirds of the surveyed SMEs as the second most important aspect, in addition to transparency. Responsiveness (Reis et al. 2004: 201 et seq.; Gable et al. 2006: 211 et seq.) is essential in business relationships. Scientists such as Reis et al. assumed that motives and requirements contribute to responsiveness (Reis et al. 2004: 201 et seq.; Gable et al. 2006: 211 et seq.) which can be determined by appreciation to the collaborating partner and perceiving each other's feelings and needs without being selfish (Reis et al. 2004: 201 et seq.). Responsiveness (Reis et al. 2004: 201 et seq.; Gable et al. 2006: 211 et seq.) is about the *quality of relationships* and requires economic and social practices that can be realized by understanding and care for others (Gable et al. 2006: 211 et seq.). Responsiveness (Reis et al. 2004: 201 et seq.; Gable et al. 2006: 211 et seq.) can be transferred to any business relationship. Practicing responsiveness (Reis et al.

2004: 201 et seq.; Gable et al. 2006: 211 et seq.) can contribute to strengthening the interpersonal goals (Reis et al. 2004: 201 et seq.; Gable et al. 2006: 211 et seq.) of both partners which in turn, however, necessitates high personal cognition (Reis et al. 2004: 201 et seq.; Gable et al. 2006: 211 et seq.) on the part of the managers.

The consideration of the presented aspects leads to the following summarized study results:

- SMEs with more than 100 employees, in particular, are considering outsourcing management accounting functions.
- SME managing directors or owners who perform management accounting functions themselves are willing to accept business support from off-site management accounting consultants.
- SME managing directors or owners should accept support regarding the topic of personal progress, which can lead to improvements related to personal cognition.
- SMEs are ready to accept low-cost business support offered by off-site management accounting consultants compared to the employment of on-site management accounting consultants.
- SMEs do not use the full potential offered by digital transformation.
- SMEs lack competencies and application-based resources within management accounting.
- Many SMEs have already implemented off-site management accounting. This shows a positive trend in view of outsourcing management accounting functions, which needs to be extended.
- There are SMEs that operate without state-of-the-art management accounting that needs to be improved.

In view of the reasons given by the SMEs surveyed for off-site management accounting (Horak 1995: 128; Pössl 1991: 60) and the status quo of management accounting, it seems reasonable to give recommendations for action. Therefore, SMEs should carefully consider which competencies (Gleich et al. 2016: 73 et seq.; Kaltenbacher 2011: 78; Piezonka 2013: 13) and resources (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) they need to achieve state-of-the-art management accounting. They should also assess which management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) are best suited to be outsourced that can contribute to the creation of off-site management accounting (Horak 1995: 128;

Pössl 1991: 60) which can amongst others be characterized by participating in digital transformation (Kessler et al. 2019: 87 et seq.; Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.). Furthermore, SMEs should seek to establish a relationship of trust (Urigshardt et al. 2008: 1 et seq.; Becker et al. 2006: 439; Carey et al. 2016: 307) with service partners specializing in management accounting, digital transformation (Albrecht 2015: 3; Kugler et al. 2018: 1 et seq.), and process optimization, as would be the case with Business Process Outsourcers (BPOs) (Accenture 2018). This option can be recommended in comparison to the collaboration with individual businesses (NordConsulting 2021; SBU Götz Concept 2021; Karin Menne - Interim Management 2021; Zahlenklar accounting & Consulting 2020; Modul-Consult 2021) that are specialized in project-related off-site management accounting (Horak 1995: 128; Pössl 1991: 60), as Business Process Outsourcers (BPOs) (Accenture 2018) can offer a variety of services, process optimization, and know-how in digital transformation (Accenture 2018). Topics related to changes, as would be the case with an off-site management accounting (Horak 1995: 128; Pössl 1991: 60), should moreover be communicated openly and timely with employees (Immerschitt et al. 2014: 29). As a result, an employee's fears and prejudices can be reduced.

10.2 OUTLOOK

This dissertation concludes with an outlook on possible future research topics and on further improvements in the collaboration of service partners. In this conjunction, reference will be taken to the result of Hypothesis 5 (H5) and Questions 9-26. The result of Hypothesis 5 (H5) leads to the following considerations:

The managing director's or owner's personal cognition (Reis et al. 2004: 201 et seq.; Gable et al. 2006: 211 et seq.) must also be used as an explanatory approach (Mayring 2016: 40 et seq.; Kaiser 2014: 21 et seq.; Atteslander 2010: 21 et seq.). For example, it is conceivable that the SME managing director or owner advocates outsourcing measures (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) due to his cognitive problems (Reis et al. 2004: 201 et seq.; Gable et al. 2006: 211 et seq.), which could be detected by others such as the stakeholders, which would be the case if the managing director or owner himself (Klett et al. 2010: 6 et seq.; Tegel 2015: 132; Deloitte 2008: 7 et seq.) carried out management accounting tasks (Zimmermann 2001: 10; Jung 2011: 5 et seq.; Troßmann 2018: 4; Jäger 2003: 25; Friedl 2019: 38;

Lingnau et al. 2017: 137 et seq.). Stakeholder groups could be aware of his lack of personal quality. As a consequence, the SME managing director or owner could suffer a serious loss of face. Partial or entire outsourcing (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11) of management accounting functions (Mehlan 2007: 11; Tschandl 2012: 16; Erichsen 2010: 68 et seq.) allows SME managing director or owner to learn something new with the aid of, for instance, coaching in the field of cognitive progress. Professional diagnostic and feedback processes for sustainable personal progress can be cited as suitable solutions to improve cognitive performance and responsiveness (Reis et al. 2004: 201 et seq.; Gable et al. 2006: 211 et seq.). Suchlike solutions offer a face-saving advantage for everyone involved.

So far, the topic of *personal cognition* and *responsiveness* (Reis et al. 2004: 201 et seq.; Gable et al. 2006: 211 et seq.) has received little emphasis in research as an explanatory approach for outsourcing measures (Schewe et al. 2007: 2 et seq.; Bagad 2009: 11). This results in the further need for research. Thus, the result of Hypothesis 5 (H5) and Question 9-26 contributes to an additional research question. In this respect, a possible research question is formulated below:

What personal cognitive reasons may lead SME managing directors or owners to outsource management accounting functions?

Moreover, the answers to the research question shown above can be examined by means of qualitative research method (Mayring 2016: 40 et seq.; Kaiser 2014: 21 et seq.; Atteslander 2010: 21 et seq.), which can be realized with the aid of expert interviews (Mayring 2016: 66 et seq.; Kaiser 2014: 21 et seq.; Atteslander 2010: 142 et seq.). This offers the possibility to deepen the quantitative results obtained within this work by using different research methods.

BIBLIOGRAPHY

Abharamczik, C. (2012): Die erfolgreiche Internationalisierung kleiner und mittlerer Unternehmungen (KMU), in: Steinle, C. (Editor): Modellentwicklung, empirische Überprüfung sowie Handlungsempfehlungen für die Managementpraxis. Schriften zum Management. Band 37. München und Mering: Rainer Hampp Verlag, p.14.

Accenture (2018): Business Process Outsourcing (BPO). Retrieved 2018, December 12, from: https://www.accenture.com/us-en/bps-bpo-index.

Ackere, A. (1993): The principal/agent paradigm: Its relevance to various functional Fields, in: European Journal of Operational Research, Vol. 70/1993, pp. 83-103.

Albrecht, J. (2015): Digitale Transformation. Herausforderungen für Unternehmen im B2C Bereich. Hamburg: Disserta Verlag.

Alikhan, S. and Mashelkar. A. (2006): Intellectual Property and Competitive Strategies in the 21st century. New Delhi: Aditya Prakashan.

Anderson, D. R., Sweeney D. J., Williams, T. A., Freeman, J. and Shoesmith, E. (2007): Statistics for Business and Economics. London: Thomson.

Atack, I. (2012): Nonviolence in Political Theory. UK: Edinburgh University Press Ltd.

Atteslander, P. (2010): Methoden der empirischen Sozialforschung. 13. Auflage. Berlin: Erich Schmidt Verlag.

Bacher, J., Pöge, A. and Wenzig, K. (2010): Clusteranalyse: Anwendungsorientierte Einführung in Klassifikationsverfahren. 3. Auflage. München: Oldenbourg.

Backes-Gellner, U., Schröer, S., Kay, R. and Wollf, K. (2013): Mitarbeiterbeteiligung in kleinen und mittleren Unternehmen. Verbreitung, Effekte, Voraussetzungen. Wiesbaden: Springer.

Bagad, V. S. (2009): Management Information Systems. 4. Auflage. India: Technical Publications Pune.

Bals, H. and Fisher, E. (2014): Finanzmanagement im öffentlichen Sektor. Budgets, Produkte, Ziele. 3. Auflage. Heidelberg: Hüthig Jehle Rehm.

BDU (2006): Bundesverband Deutscher Unternehmensberater. Controlling. Ein Instrument zur ergebnisorientierten Unternehmenssteuerung und langfristigen Existenzsicherung. Leitfaden für die Controllingpraxis und Unternehmenspraxis. 5. Auflage. Berlin: Erich Schmidt Verlag.

Beck, G. (1998): Controlling. Alling: Sandmann.

Becker, J. and Winkelmann, A. (2006): Handelscontrolling. Optimale Informationsversorgung mit Kennzahlen. 1. Auflage. Berlin: Springer Gabler.

Becker, J. and Winkelmann, A. (2014): Handelscontrolling. Optimale Informationsversorgung mit Kennzahlen. 3. Auflage. Berlin: Springer Gabler.

Becker, R. (2008): Employee Self-Service in kleinen und mittleren Unternehmen: Eine strategische Potentialanalyse effizienzsteigernder Maßnahmen. Norderstedt: Books on Demand Verlag.

Behrens, T., Meyer, U. and Korjamo, E. (2005): Strategisches Management in KMU – Befunde, Anforderungen und Gestaltungsmöglichkeiten, in: Schöning, S., Ott, I., Richter, J. and Nissen, D. (Editor): Kleine und mittlere Unternehmen in Umbruchsituationen. Frankfurt: Verlag Peter Lang, pp. 17-34.

Behringer, S. (2018): Controlling, Wiesbaden: Springer Gabler.

Bennett, R. J., Bratton, W. A., and Robson, P. J. A. (2000): Business Advice: The influence of Distance, in: Regional Studies. Vol. 34, Issue 9, pp. 813-821.

Benston, G. J. (1966): Multiple Regression Analysis of Cost Behavior, in: The Accounting Review. Vol. 41, Issue 4, pp. 657-672.

Berndt, R. (2006): Management-Konzepte für kleine und mittlere Unternehmen, in: Berndt, R. (Editor): Heidelberg: Springer Verlag, p. 9.

Berry, A. J., Sweeting, R. and Goto, J. (2006): The effect of business advisers on the performance of SMEs, in: Journal of Small Business and Enterprise Development, Vol. 13 Issue 1, pp. 33-47.

BMWi (2017): Digitale Geschäftsmodelle. Themenheft Mittelstand-Digital, Vol. 03/2017, pp. 4-31.

Bollessen, D. (2014): Der fortschreitende Fachkräftemangel in Folge des demographischen Wandels. Denkbare Konzepte und Erfolgsstrategien zur langfristigen Mitarbeiterbindung. Hamburg: Diplomica Verlag.

Bouckowá, M. (2015): Management Accounting and Agency Theory, in: Procedia Economics and Finance, Vol. 25/2015, pp. 5-13.

Broich, J. D. (2015): Mitarbeiterbindung in KMU: Analyse von Instrumenten und Maßnahmen. Hamburg: Igel Verlag.

Brosius, F. (2013): SPSS 21. Heidelberg: mitp Verlag.

Bruch, H. (1998): Outsourcing. Konzepte und Strategien, Chancen und Risiken. Wiesbaden: Gabler.

Bruns, W. J. and Waterhouse, J. H. (1975): Budgetary Control and Organization Struckture, in: Journal of Accounting Research. Vol. 13, Issue 2, pp. 177-203.

Bucerius, M. (2004): Marketing-Integration nach Fusionen und Akquisitionen, in: Bauer H. H. and Homburg, C. (Editor): Schriftenreihe des Instituts für marktorientierte Unternehmensführung. Wiesbaden: DUV, p. 18.

Bühler, M. and Simbeck, K. (2018): Marktorientiertes Produkt- und Produktionsmanagement in digitalen Welten, in: Khare, A., Kessler, D. and Wirsam, J. (Editor): Digitalisierung in der Baulogistik. Wiesbaden: Springer Gabler, p. 197.

Bullinger, H.-J. and Kinkel, S. (2009): Mittelstand – Schlüsselakteur im deutschen Innovationssystem. in: Franz, O. (Editor): Das Innovationsverhalten der kleinen und mittleren Unternehmen als Basis für künftige inländische Wertschöpfungspotentiale. Sternenfels: Verlag Wissenschaft & Praxis, p. 20.

Buriánek, F. (2009): Vertragsgestaltung bei hybriden Leistungsangeboten, in: Picot, A., Reichwald, R., Franck, E. and Möslein, K. (Editor): Eine ökonomische Betrachtung. Wiesbaden: Gabler, p. 75.

Bußmann, S. (2015): Aktuelle Herausforderungen in der Wirtschaftsförderung, in: Lempp, J., van der Beek, G. and Korn, T. (Editor): Konzepte für eine positive regionale Entwicklung. Wiesbaden: Springer Gabler, p. 47.

Carey P. and Tanewski, G. (2016): The provision of business advice to SMEs by external accountants, in: Managerial Auditing Journal. Vol. 31, Issue 3, pp. 290-313.

DeCoster, D. T. and Fertakis, J. P. (1968): Budget-Induced Pressure and Its Relationship to Supervisory Behavior, in: Journal of Accounting Research. Vol. 6, Issue 2, pp. 237-246.

Deloitte (2008): Unternehmensführung und Controlling. Aus der Studienserie Erfolgsfaktoren im Mittelstand, Vol. 9/2008, pp. 7-20.

Diamant (2017): Digitalisierung, Automatisierung und Vernetzung im Rechnungswesen und Controlling. Status Quo und Ausblick, Vol. 10/2017, pp. 2-11.

Dibbern, J., Güttler, W., Heinzl, A. (1999): Die Theorie der Unternehmung als Erklärungsansatz für das Outsourcing der Informationsverarbeitung. Entwicklung eines theoretischen Bezugsrahmens, Bayreuter Arbeitspapiere zur Wirtschaftsinformatik, Vol. 6/1999, p 4.

Diederichs, M. (2014): Global Sourcing: Chancen- und Risikopotentiale für kleine und mittlere Unternehmen. Hamburg: Igel Verlag.

Diehm, J. (2014): Controlling in Start-up-Unternehmen. Praxisbuch für junge Unternehmen und Existenzgründungen. 2. Auflage. Wiesbaden. Springer Gabler Verlag.

Dierkes, S. and Schäfer, U. (2008): Prinzipal-Agenten-Theorie und Performance Measurement, in: Controlling & Management, Sonderheft 1/2008, pp. 19-27.

Dietrich, A. J. (2007): Informationssysteme für Mass Customization. Institutionenökonomische Analyse und Architekturentwicklung. Dissertation. Wiesbaden. GWV Verlag.

Dittrich, J. and Braun, M. (2004): Business Process Outsourcing: Entscheidungs-Leitfaden für das Out- und Insourcing von Geschäftsprozessen. Stuttgart: Schäffer Poeschel.

Drenth, P. J. D., Koopman, P. L., Rus, V., Odar, M., Heller, F. and Brown, A. (1979): Participative Decision Making: A Comparative Study, in: Industrial Relations, Vol. 18, Issue 3, pp. 295-309.

Dömötör, R. (2011): Erfolgsfaktoren der Innovativität von kleinen und mittleren Unternehmen. Dissertation. Wiesbaden: Gabler Springer.

Doering, N. and Bortz, J. (2016): Forschungsmethoden und Evaluation in den Sozial- und Humanwissenschaften. 5. Auflage. Heidelberg: Springer Verlag.

Donaldson, L. (2001): The Contingency Theory of Organizations, London: Sage Publications.

Eckstein, P. P. (2006): Angewandte Statistik mit SPSS: Praktische Einführung für Wissenschaftler. 5. Auflage. Wiesbaden: Gabler.

Eierle, B. and Schultze, W. (2013): The Role of Management as a User of Accounting Information: Implication for Standard Setting, in: Accounting and Management Information Systems, Vol. 12, Issue 2, pp. 155-189.

Erichsen, J. (2010): Controlling für Einsteiger, in: Jörgen Erichsen (Editor). München: Haufe, pp. 68-69.

Ernst-Siebert, R. (2008): KMU im globalen Innovationswettbewerb. Eine Unterschung des betriebsgrößenspezifischen Innovationsverhaltens und innovationsreduzierter Beschäftigungseffekte. München und Mering: Rainer Hampp Verlag.

Eschenbach, R. and Siller, H. (2019): Controlling professionell. Gut gerüstet für digitale Herausforderungen. 3. Auflage. Stuttgart: Schäffer Poeschel.

Euler Hermes (2006): Wirtschaft Konkret Nr. 414. Ursachen von Insolvenzen, p. 20.

Eymannsberger, H. (2017): Der Mittelstand, in: Oberholzer, K. (Editor): Zentrum und Drehscheibe in Wirtschaft und Gesellschaft. Wissenschaftliche Schriftenreihe der Wirtschaftskammer Salzburg. Band 12. Wien: LIT Verlag, p. 93.

Felden, B., Hack, A. and Hoon, C. (2019): Management von Familienunternehmen. 2. Auflage. Wiesbaden: Springer Gabler.

Fließ, S. (2001): Die Steuerung von Kundenintegrationsprozessen: Effizienz in Dienstleistungsunternehmen. Wiesbaden: Springer.

Friedl, G. (2019): Neue Aufgaben im Controlling durch digitale Transformation, in: Controlling, Vol. 31, Issue 3, pp. 38-41.

Gable, S. L. and Reis, H. T. (2006): Intimacy and the self: An iterative model of the self and close relationships. in: Noller, P. and Feeney, J.A., (Editor): Close relationships: Functions, forms and processes. Hove (England): Psychology Press/Taylor & Francis (UK), pp. 211–225.

Gaugler, T. (2000): Interorganisatorische Informationssysteme, in: Becker, J., Grob, H. L. and Klein, S. (Editor): Ein Analyse- und Gestaltungsrahmen für das Informationsmanagement. Dissertation. Wiesbaden: DUV, p. 59.

Gehrckens, H. M. (2016): Digitale Transformation oder digitale Disruption im Handel, in: dgroup (Editor): Vom Point-of Sale zum Point-of-Decision im Digital Commerce. Wiesbaden: Springer Gabler, pp. 80-104.

Gleich, R. (2008): Management Reporting. Grundlagen, Praxis, Perspektiven, in: Gleich, R., Horváth, P. and Michel, U. (Editor): Grundlagen des Management Reportings; Praxisbeispiele aus unterschiedlichen Branchen; innovative Reportingansätze und Zukunftsperspektiven. Haufe: Freiburg, p. 253.

Gleich, R. (2013): Controllingprozesse optimieren. München: Haufe-Lexware.

Gleich, R., Knocke, H. and Laux T. (2017): Erfolgreiche Führung von Shared Services, in: Fischer T. M. and Vollmer, M. (Editor): SSC als Geschäftsmodell und Ansatzpunkte zur Geschäftsmodellinnovation, ZbfF-Sonderheft 70/17. Wiesbaden: Springer, p. 160.

Gleich, R., Nasca, D. and Munck, C. (2016): Digitalisierung & Controlling. Technologien, Instrumente, Praxisbeispiele, in: Gleich R. and Tschandl, M. (Editor): Controlling-Hauptprozesse: Einfluss der digitalen Transformation. München: Haufe, pp. 73-88.

Gottfreund, M. (2015): Kommunale Unternehmen und Controlling. Entwicklung eines Konzepts am Beispiel der KDI GmbH. Hamburg: Diplomica Verlag.

Goyal, D. P. (2014): Management Information Systems: Managerial Perspectives, 4th Edition. India: VIKAS Publishing House.

Grohmann, O. (2007): Integration der Informationstechnologie im Rahmen des Post-Merger Managements mittelständischer Industrieunternehmen, Schriftenreihe Personal- und Organisationsentwicklung, Dissertation. Kassel: University Press GmbH.

Gross, J., Bordt, J. and Musmacher, M. (2006): Business Process Outsourcing. Grundlagen, Methoden, Erfahrungen. Wiesbaden: Gabler.

Häder, M. and Häder, S. (2014): Handbuch Methoden der empirischen Sozialforschung, in: Baur, N. and Blasius, J. (Editor): DELPHI-Befragung. Wiesbaden: Springer, pp. 587-592.

Hahn, D. and Laßmann, G. (1999): Produktionswirtschaft. Controlling industrieller Produktion. Band 1 & 2: Grundlagen, Führung und Organisation, Produkte und Produktprogramm, Material und Dienstleistungen, Prozesse. 3. Auflage. Berlin: Springer.

Hahn, D. (2013): PuK. Planung und Kontrolle. Planungs- und Kontrollsysteme. Planungs- und Kontrollrechnung. Controllingkonzepte. Wiesbaden: Springer.

Hammann, E. M., Habisch, A. and Pechlaner, H. (2009): Values that create value: Socially responsible business practices in SMEs – empirical evidence from German companies, in: Business Ethics: A European Review, Vol. 18, Issue 1, pp. 37-51.

Hanslik, A. (2012): Internationaler Markteintritt von kleinen und mittleren Unternehmen in China. Eine transaktionskostentheoretische Modellierung. Dissertation, Wiesbaden: Springer Gabler.

Hayek, F. (1945): The use of knowledge in society, in: American Economic Review, Volume 35, Issue 4, pp. 519-530.

Heimel, J. and Müller, M. (2019): Management 4.0 – Unternehmensführung im digitalen Zeitalter. Handlungsfeld Geschäftsmodell. Datenzugriff, in: Erner, M. (Editor): Auf dem Prüfstand. Berlin: Springer, p. 402.

Heinrich, C. (2018): Mobilität und digitale Transformation: Technische und betriebswirtschaftliche Aspekte, in: Proff, H. and Fojcik, T. M. (Editor): Mehrfach Transformation in der automobilen Mobilität. Wiesbaden: Springer Gabler, pp. 106-117.

Henschel, T. (2010): Erfolgreiches Risikomanagement im Mittelstand. Strategien zur Unternehmenssicherung. Berlin: Erich Schmidt Verlag.

Heupel, T., Deimel, K. and Wiltinger, K. (2013): Controlling. München: Verlag Vahlen.

Heyse, V. (2018): Mittelstand 4.0 – eine digitale Herausforderung: Führung und Kompetenzentwicklung im Spannungsfeld des digitalen Wandels, in: Heyse, V., Erpenbeck, J., Ortmann, S. and Coester, S. (Editor): Mittelstand 4.0 im Spannungsfeld des digitalen Wandels, Kompetenzmanagement in der Praxis, Band 11. Göttingen: Waxmann, p. 13.

Hoch, G. (2003): Erfolgs- und Kostencontrolling. Einführung anhand ausgewählter Schaubilder, Fälle und Beispiele. München: Verlag Oldenbourg.

Holling, H. and Gediga, G. (2011): Statistik-Deskriptive Statistik. Göttingen: tbgrefe Verlag.

Horak, C. (1995): Controlling in Nonprofit-Organisationen. Erfolgsfaktoren und Instrument, in: Eschenbach, Rolf (Editor): Wiesbaden: Springer Verlag, pp. 128-129.

Horváth, P. and Aschenbrücker, A. (2014): Controlling und Big Data. Anforderungen, Auswirkungen, Lösungen, in: Gleich, R., Grönke, K., Kirchmann, M. and Leyk, J. (Editor): Data Scientist: Konkurrenz oder Katalysator für den Controller? München: Haufe, pp. 47-62.

Hüfken, V. (2014): Handbuch Methoden der empirischen Sozialforschung, in: Bauer, N. and Blasius, J. (Editor): Telefonische Befragung, Wiesbaden: Springer, pp. 631-.640.

Hügler, M., Wahl, D. and Härting, R. C. (2019): Potenziale digitaler Geschäftsmodelle und deren -prozesse, in: Härting, R. C., (Editor): Ein Branchenvergleich. Norderstedt: BoD, pp. 53-57.

Hummel, T. R. and Zander, E. (2009): Erfolgsfaktor Unternehmensberatung. Auswahl – Zusammenarbeit – Kosten – Fördermaßnahmen. 5. Auflage, in: Hummel, T. R. Schriften zum internationalen Management. München: Rainer Hampp, pp. 11-306.

IFM (2017): Institut für Mittelstandsforschung, Bonn. KMU-Definition des IfM Bonn. Retrieved 2017, December 20, from: https://www.ifm-bonn.org/definitionen/kmu-definition-des-ifm-bonn/.

Ihlau, S., Duscha H. and Gödeke S. (2013): Besonderheiten bei der Beurteilung von KMU: Planungsplausibilisierung, Steuern, Kapitalisierung. Wiesbaden: Springer Gabler Verlag.

Immerschitt, W. and Stumpf, C. (2014): Employer Branding für KMU. Der Mittelstand als attraktiver Arbeitgeber. Wiesbaden: Springer Gabler Verlag.

Israel. D. (2008): Data Analysis Business Research: A Step-By-Step Nonparametric Approach. London: SAGE Publications.

Jäger, U. (2003): Wertbewusstes Controlling. Weiche und harte Faktoren integrieren. Wiesbaden: Gabler.

Jänchen, I. (2008): Normungsstrategien für Unternehmen. Eine ökonomische Analyse. Berlin: Beuth.

Jenny, B. (2019): Projektmanagement: Das Wissen für den Profi. 4. Auflage. Zürich: vdf Hochschulverlag AG.

Jung, H. (2011): Controlling. 3. Auflage. München: Oldenbourg Verlag.

Keasey, K. and Watson, R. (1991): An Agency Perspective of Auditor Change in Small Firms, in: The Journal of Entrepreneurial Finance, Vol. 1, Issue 1, pp. 45-49.

Kästner, M. (2012): Risikomanagement im Mittelstand, in: Locarek-Junge, H., Röder K. and Wahrenburg, M. (Editor): Anforderungen und Ausgestaltung quantitativer Risikostreuung. Band 82. Dissertation. Lohmar – Köln: EUL Verlag, pp. 11-16.

Kaiser, R. (2014): Qualitative Experteninterviews. Konzeptionelle Grundlagen und praktische Durchführung. Wiesbaden: Springer.

Kaland, A. (2014): Controlling im Facheinzelhandel: Eine empirische Untersuchung zum Status quo und zu Einflussfaktoren auf die Instrumentenutzung. Dissertation. Lohmar: EUL Verlag.

Kaltenbacher, S. (2011): Integration bei Mergers & Acquisitions, in: Alewell, D., Kabst, R., Martin, A., Wenzel, M., Nienhüser, W., Schramm, F. and Weber, W. (Editor): Eine empirische Studie des Human Resource Managements aus Sicht des ressourcenbasierten Ansatzes. Schriftenreihe, Empirische Personal- und Organisationsforschung, Band 48, München: Rainer Hampp, pp. 77-78.

Kam, V. (1990): Accounting Theory, 2nd edition. New York: John Wiley & Sons.

Karin Menne (2021): Referenzprojekte – Interimmanagement-Finanzen, retrieved 2021, January 26, from: https://www.interimmanagement-finanzen.de/ist-interimmanagement/.

Keimer, I. and Egle, U. (2020): Agilität. Wenn Flexibilität Methode hat. Die Treiber der Digitalisierung im Controlling, in: Controlling & Management Review, Issue 4/2018, pp. 62-67.

Keimer, I. and Egle, U. (2020): Die Digitalisierung der Controlling-Funktion, in: Keimer, I. and Egle, U. (Editor): Anwendungsbeispiele aus Theorie und Praxis. Wiesbaden: Springer, pp. 2-3.

Kenning, P. (2003): Marketing-Controlling-Kompetenz, in: Pepels, W. (Editor): Grundwissen marktorientierter Unternehmenssteuerung. Berlin: Erich Schmidt Verlag.

Kessler, R., Kruse, F., Dmitriyev, V., Berghaus, G. and Gómez, J. M. (2019): Digitale Geschäftsprozesse - Band 1, in: Meinhardt, S. and Pflaum (Editor): Geschäftsmodell – Innovationen, digitale Transformation, digitale Platform, Internet der Dinge und Industrie 4.0. Wiesbaden: Springer Viewer, pp. 84-101.

Kieninger, M., Mehanna, W. and Vocelka, A. (2016): How Big Data is changing Controlling, in: Controlling – Magazine success-based Corporate Performance Management, Vol. 28, Issue 4/5, pp. 2-8.

Kieninger, M., Michel, U. and Mehanna, W. (2015): Auswirkungen der Digitalisierung auf die Unternehmenssteuerung, in: Horváth, P. and Michel, U. (Editor): Controlling im digitalen Zeitalter. Stuttgart: Schäffer-Poeschel Verlag, pp. 3-13.

Klett, C. and Pivernetz, M. (2010): Controlling in kleinen und mittleren Unternehmen. Ein Handbuch mit Auswertungen auf Basis der Finanzbuchhaltung. 4. Auflage. Berlin: Verlag Neue Wirtschafts-Briefe.

Klippstein, G., Krüger, W., Merk, R. and Wittberg, V. (2008): Praxishandbuch des Mittelstands. Leitfaden für das Management mittelständischer Unternehmen, in: Klippstein, G., Merk, R. and Wittberg, V. (Editor): Standortbestimmung – Wo steht der Mittelstand? Wiesbaden: Gabler, p. 368.

Knoche, I. and Lüdemann, N. (2020): Der Mensch in der digitalen Transformation: Grundlagen- und Arbeitsbuch, 2. Auflage. Norderstedt: BoD.

Knop, R. (2009): Erfolgsfaktoren strategischer Netzwerke kleiner und mittlerer Unternehmen, in: Ahlert, D., Creusen, U., Ehrmann, T. and Olesch, G. (Editor): Ein IT-gestützter Wegweiser zum Kooperationserfolg. Dissertation. Wiesbaden: Gabler, p. 3-14.

Kocian, C. (1999): Virtuelle Kooperationen im Mittelstand, in: Scheer, A. W. (Editor): Schriften zur EDV-orientierten Betriebswirtschaft. Wiesbaden: Springer, p. 39.

Köper, J. and Zaremba, H. J. (2000): Quality Management and Qualification needs: Quality and Personal Concepts of SMEs in Europe. Heidelberg: Physica.

Kolb, S. (2006): Integriertes Turnaround-Management. Konzept zur nachhaltigen Überwindung von Unternehmenskrisen in KMU. Band 1. Dissertation. Frankfurt: Peter Lang Verlag.

Koop, H. J., Jäckel K. K. and van Offern A. L. (2001): Erfolgsfaktor Content Management, in: Stephen Fedtke (Editor): Vom Web Content bis zum Knowledge Management. Wiesbaden: Friedrich Vieweg Verlag, pp. 207-208.

KPMG (2018): Digitalisierung im Rechnungswesen 2018. Eine Bestandsaufnahme im Accounting und Controlling. Studie, pp. 5-46.

Kraemer, W. (1993): Effizientes Kostenmanagement: EDV-gestützte Datenanalyse und -interpretation. Wiesbaden: Gabler.

Kraewing, M. (2017): Digital Business Strategie für den Mittelstand. Entwicklung und Konzeption mit internationaler Ausrichtung. Freiburg: Haufe-Lexware.

Kralj, D. (2004): Vergütung von Beratungsdienstleistungen: Agencytheoretische und empirische Analyse. Dissertation. 2004. Wiesbaden: Gabler.

Krause, E. (2008): Methode für das Outsourcing in der Informationstechnologie von Retail Banken. Dissertation. Berlin: Logos.

Krause, H. U. and Steins, U. (2001): Controlling. Ein zielorientiertes Steuerungssystem im Managementprozess. Stuttgart: Schäffer-Poeschel.

Krcmar, H. (2018): Digitale Transformation. Fallbeispiele und Branchenanalysen, in: Oswald, G. and Krcmar, H. (Editor): Charakteristika digitaler Transformation. Wiesbaden: Springer Gabler, p. 5.

Kruse, D. (2012): Risikomanagement und unternehmerisches Handeln: Die Frage nach der Notwendigkeit. Hamburg: Diplomica Verlag.

Kühnl, C. (2010): Erfolgsfaktoren im Innovationsmanagement, in: Bauer, H. H., Homburg, C. and Küster, S. (Editor): Eine empirische Betrachtung aus Hersteller- und Anwendersicht. Schriftenreihe des Instituts für marktorientierte Unternehmensführung. Wiesbaden: Gabler Springer, p. 62.

Kugler, S. and Andrich, F. (2018): Digitale Transformation im Mittelstand mit System: Wie KMU durch eine innovative Kultur den digitalen Wandel schaffen. Wiesbaden: Springer Gabler.

Kummert, B. (2004): Controlling in kleinen und mittleren Unternehmen, in: Bauer, U., Biedermann, H. and Wohinz, J. W. (Editor): Vom Geschäftsmodell zum Controller-Profil. Dissertation. Wiesbaden: Verlag Springer, p. 162.

Lewin, K. (1951): Problems of Research in Social Psychology, in: Field Theory in Social Science, Selected Theoretical Papers, D. Cartwright (Editor): New York: Harper & Row, p. 169.

Liebhart, U. E. (2001): Strategische Kooperationsnetzwerke. Entwicklung, Gestaltung und Steuerung. Dissertation. Wiesbaden: Deutscher Universitäts-Verlag.

Lingnau, V. and Brenning, M. (2017): Management der digitalen Transformation. Interdisziplinäre theoretische Perspektive & Praktische Annahmen, in: Lingnau, V., Müller-Seitz, G. and Roth, S. (Editor): Big-Data - Bad Decisions 2 - Implikationen der digitalen Transformation für das Controlling, München: Vahlen, pp. 137-170.

Lingnau, V. and Seewald Y. B. (2017): Controlling für kleine und mittlere Unternehmen, in: Müller, D. (Editor): 2. Auflage, Oldenbourg: De Gruyter, p. 84.

Lohr, M. (2012): Specificities of Managerial Accounting at SMEs: Case Studies from the German Industrial Sector, in: Journal of Small Business & Entrepreneurship, Vol. 25, Issue 1, pp. 35-55.

Lord, A. T. (1989): The Development of Behavioral Thought in Accounting, in: Behavioral Research in Accounting, Vol. 1, Issue 1, pp. 124-149.

Lühr, P. (2001): Externe Berater erfolgreich einsetzen. Der Weg in eine gewinnbringende Partnerschaft auf Zeit. Wiesbaden: Gabler.

Manley, P. S. (1982): A market view of Current Cost Accounting, in: Management Decision, Vol. 20, Issue 1, pp. 22-31.

Marquardt, G. (2003): Kernkompetenzen als Basis der strategischen und organisationalen Unternehmensentwicklung. Dissertation. Wiesbaden: Springer.

Martin, A. and Bartscher-Finzier, S. (2006), in: Praxishandbuch des Mitteltandes. Leitfaden für das Management mittelständischer Unternehmen. Wiesbaden: Gabler, pp. 212-213.

Marzahl, B. (2014): Risikomanagement im Mittelstand: Ratgeber für den professionellen Forderungseinzug. Hamburg: Igel Verlag.

Mayring, P. (2016): Einführung in die qualitative Sozialforschung. 6. Auflage. Weinheim und Basel: Beltz Verlag.

McKinsey (2017): Die Digitalisierung des deutschen Mittelstandes. Kurzstudie, Vol. 02/2017, pp. 2-9.

Mehlan, A. (2007): Praxishilfen Controlling. Die besten Controlling-Instrumente mit Excel. München: Haufe.

Menzel, D. and Günther, L. (2011): Nachhaltigkeit in kleinen und mittleren Unternehmen, in: Meyer, J. A. (Editor): Lohmar: EUL Verlag, pp. 93-94.

Merchant, K. A. (1985): Budgeting and the propensity to create budgetary slack, in: Accounting, Organizations and Society, Vol. 10, Issue 2, pp. 201-210.

Meyer, C. (1996): Betriebswirtschaftliches Rechnungswesen. Einführung in Wesen, Technik und Bedeutung des modernen Management Accounting, 2. Auflage. Zürich: Schulthess.

Mistlberger, K. (2004): Handbuch Finanzmanagement in der Praxis, in: Guserl, R. and Pernsteiner, H. (Editor): Organisation des Controllings eines internationalen Commodity Handelshauses. Wiesbaden: Gabler, pp. 297-298.

Modul-Consult (2021): Die Klarheit und der richtige Kurs in Ihrem Unternehmen – durch externes Controlling für den Mittelstand und Handwerk, retrieved 2021, January 26, from: https://modul-consult.de/Externes-Controlling.html.

Moran, A. (2015): Managing People. Strategy, Creation, Organisation and People. Heidelberg: Springer.

Müller, P. (2011): Einsatz älterer Menschen zur Reduktion des Fachkräftemangels: Eine Analyse in mittelständischen Unternehmen. Wiesbaden: Springer Gabler.

Müller, V. (2014): Interne und externe Weiterbildung. Ist die Bildung im betriebswirtschaftlichen Umfeld auch heute noch von Bedeutung? Hamburg: Igel Verlag.

Müller-Seitz, G. and Weiss, W. (2019): Strategien zur Umsetzung der digitalen Transformation. Einblicke in die Erfolgsfaktoren eines Hidden Champion. München: Vahlen.

Muth De, J. E. (2006): Basic Statistics and Pharmaceutical Statistical Applications, 2nd Edition, New York: Taylor & Francis Group. L.L.C.

Nöcker, C. (2018): Digitale Exzellenz. Erfolgreich digitalisieren im Mittelstand. Berlin: Pro BUSINESS.

NordConsulting (2021): Partner des Mittelstandes. Retrieved 2021, January 26, from: https://ncnordconsulting.de/controlling/.

Ossadnik, W. (2003): Controlling, 3. Auflage. München: Oldenbourg.

Ossadnik, W., van Lengerich, E. and Barklage, D. (2010): Controlling mittelständischer Unternehmen. Empirischer Status quo und Handlungsempfehlungen. Heidelberg: Springer.

Osthoff, L. (2013): Der Einfluss operativer und strategischer Planungs- und Kontrollinstrumente auf den Erfolg mittelständischer Unternehmen. Eine panelökonometrische Analyse. München und Mehring: Rainer Hampp.

Otley, D. T. (1978). Budget Use and Managerial Performance, in: Journal of Accounting Research. Vol. 16, Issue 1, pp. 122-149.

Peemöller, V. H. (1990): Controlling. Grundlagen und Einsatzgebiete. Berlin: Verlag Neue Wirtschafts-Briefe.

Pérez, N. M. (2008): Service Center Organisation. Neue Formen der Steuerung von internen Dienstleistungen unter besonderer Berücksichtigung von Shared Services. Dissertation. Wiesbaden: GWV Fachverlag.

Peterson, H. (2005): Data Mining: Verfahren, Prozesse, Anwendungsarchitektur. München: Oldenbourg.

Pfannstiel, M. A. (2016): Betriebliches Gesundheitsmanagement, in: Mehlich, Harald (Editor): Konzepte, Maßnahmen, Evaluation. Wiesbaden: Springer Gabler, p. 23.

Pflaum, A. and Klötzer, C. (2019): Geschäftsmodelle in der digitalen Welt. Strategien, Prozesse und Praxiserfahrungen, in: Becker, W., Eierle, B., Fliaster, A., Ivens, B., Leischnig, A., Pflaum, A. and Sucky, E. (Editor): Von der Pipeline zur Plattform – Strategische Implikationen für das Unternehmen. Wiesbaden: Springer Gabler, pp. 57-72.

Pietsch, Gotthard (2003): Reflexionsorientiertes Controlling: Konzeption und Gestaltung, Dissertation. Wiesbaden: GVW Fachverlage GmbH.

Piezonka, S. (2013): Bindungsmanagement im industriellen Mittelstand, in: Becker, F. G. and Oechsler, W. A. (Editor): Eine explorative Studie bei Ingenieuren. Lohmar-Köln: EUL Verlag, p. 13.

Planung & Analyse (2016): Data Science. Retrieved 2021, January 11, from: https://www.horizont.net/planung-analyse/nachrichten/Master-in-Data-Science-kommen-aus-Mannheim-150004.

Pleitner, H. J. (1989): Small firms and the information problem, in: European Management Journal, Vol. 7, Issue 4, pp. 442-450.

Pössl, W. (1991): Controlling und externe Beratung. München: Vahlen Verlag.

Reichmann, T., Kißler, M. and Baumöl, U. (2017): Controlling mit Kennzahlen: Die systemgestützte Controlling-Konzeption. 9. Auflage. München: Vahlen.

Reis, H. T., Clark, M. S. and Holmes, J. G. (2004): Perceived partner responsiveness as an organizing construct in the study of intimacy and closeness, in: Mashek, D.J. and Aron, A.P., (Editor): Handbook of closeness and intimacy. Mahwah, N.J.: US: Lawrence Erlbaum Associates Publishers, pp. 201–225.

Reuband, K. H. (2014): Handbuch Methoden der empirischen Sozialforschung, in: Bauer, N. and Blasius, J. (Editor): Schriftlich-postalische Befragung, Wiesbaden: Springer, pp. 643-660.

Ridder, H. G., Bruns, H. J. and Spier, F. (2006): Managing creation process, in: Public Management Review, Vol. 8, Issue 1, pp. 87-118.

Rinsche, G. (2009): Mittelstand – Schlüsselakteur im deutschen Innovationssystem, in: Franz, O. (Editor): Sternenfels: Verlag Wissenschaft & Praxis, p. 48.

Robert Half (2019). Unsere Zusammenarbeit. Retrieved 2019, February 2, from: https://www.roberthalf.de/unsere-zusammenarbeit/news-info-center/job-glossare/finanz-job-glossar/controller#bewerber.

Saam, M., Viete, S. and Schiel, S. (2016): Digitalisierung im Mittelstand: Status Quo, aktuelle Entwicklungen und Herausforderungen, ZWE – Forschungsprojekt, Mannheim.

Sachs, L. (2013): Angewandte Statistik: Statistische Methoden und ihre Anwendungen: Berlin: Springer.

Samadi, S. (2008): Die Servicefunktionen des Großhandels als Erfolgsfaktoren, in: Swoboda, B. and Foscht, T. (Editor): Dissertation, Wiesbaden: Gabler, p. 98.

Sauermann, P. (1997): Management im Mittelstand – erfolgsorientierte Ansätze und Perspektiven, in: Bührens, J. (Editor):s Sternenfels und Berlin: Verlag Wissenschaft & Praxis, p. 65.

SBU Götz Concept (2021). Controlling + Beratung für Unternehmen im Gesundheitswesen und Mittelstand. Retrieved 2021, January 26, from: https://www.sbu-goetz-konzept.de/schwerpunkte-der-beratung/.

Schauf, M. (2009): Unternehmensführung im Mittelstand, in: Schauf, M. (Editor): Rollenwandel kleiner und mittlerer Unternehmen in der Globalisierung 2. Auflage. München und Mering: Rainer Hampp Verlag, pp. 3-15.

Schauwecker, P. (2011): Opportunismus im Exportgeschäft. München: Oldenbourg.

Schewe, G. and Kett, I. (2007): Business Process Outsourcing. Geschäftsprozesse kontextorientiert auslagern. Berlin: Springer.

Schlüter, T. (2007): Fitnessprogramm für KMU und Familienunternehmen. Verbesserung der Ertragslage, - Sicherheit, Zukunftsfähigkeit und Flexibilität von Unternehmen in Zeiten turbulenter und dynamischer Märkte. Hamburg: Diplomatica Verlag.

Schneider, B. (2004): Basic Conditions, Significance, Problem Fields and Opportunities of SMEs, in: Zerres, M. (Editor): The Succesful Management of Small and Middle-sized Enterprises in a Specific Sector. Hamburger Schriften zur Marketingforschung, Band 24, München und Mering: Rainer Hampp Verlag, p. 7.

Schneider, C. (2008): Erfolgsfaktoren in kleinen Dienstleistungsunternehmen: Eine Analyse am Beispiel der Gastronomie, Dissertation. Wiesbaden: Gabler.

Schneider, M. A. (2006): The Theory Primer: A sociological guide. USA: Rourman & Littlefield Publishers.

Schnell, R., Hill, P. B. and Esser, E. (2013): Methoden der empirischen Sozialforschung. 10. Auflage. München: Oldenbourg Wissenschaftsverlag.

Schögel, M. (2012): Distributionsmanagement: Das Management der Absatzkanäle. München: Verlag Vahlen.

Schröder, S. (2017): Unternehmensnachfolge im deutschen Mittelstand: Wirtschaftspolitische und unternehmerische Herausforderungen. Wiesbaden: Springer Gabler.

Schuhmacher, J. (2005): Outsourcing von CRM-Prozessen: Voraussetzungen, Chancen, innovative Einsatzmöglichkeiten im elektronischen B2B-Markt. Dissertation. Wiesbaden: DUV-Verlag.

Schuhmann, C., Zschech, P. and Hilbert, A. (2016): Das aufstrebende Berufsbild des Data Scientist, in: HMD Praxis der Wirtschaftsinformatik, Vol. 53, Issue 4, pp. 453-466.

Schumacher, L. (2010): Die Mitarbeiterinnen und Mitarbeiter an die Organisation binden: Konsequente Personalbindung für Sozialwirtschaftliche Organisationen in: Bundesarbeitsgemeinschaft der Freien Wohlfahrtspflege (BAGFW) (Editor): Sozialwirtschaft mehr als Wirtschaft? Steuerung-Finanzierung-Vernetzung Band 27., Baden-Baden, Nomos, pp. 122-126.

Schwalbach, L. (2018): Einkauf 4.0 – Umsetzung der Digitalisierung: Voraussetzungen schaffen, Fachkonzept schreiben und umsetzen. Norderstedt: BoD Verlag.

Seehausen, S. (2014): Kapitalstrukturentscheidungen in kleinen und mittleren Unternehmen. Lohmar: EUL Verlag.

Serfling, K. (1983): Controlling, in: Schachtschabel, H. (Editor). Stuttgart: Kohlhammer.

Sesler, R. and Georg, S. (2020): Innovatives Controlling – Die 5 wichtigsten Trends. Controlling im Umfeld von Digitalisierung und Nachhaltigkeit. Freiburg: Haufe-Lexware.

Seufert, A. (2014): Controlling und Big Data, in: Gleich, R., Grönke, K., Kirchmann, M. and Leyk, J. (Editor): Anforderungen, Auswirkungen, Lösungen. München: Haufe Lexware, p. 33.

Sieloff-Leibold C. (2007): Middle Range Theory Progress Using King's Conceptional System, in: Sieloff-Leibold, C. and Frey, M. A. (Editor): The Theory of Group power with organisation-evolving conceptualization within King's conceptual system. New York: Springer.

Sierke, B. R. A., Algermissen, J. and Brinkhoff, S. (2017): Outsourcing von Controlling als Option für den Mittelstand, in: Controlling & Management Review, Volume 61, Issue 2, pp. 22-34.

Siller, H. and Grausam, A. (2016): Selbstcontrolling für Selbständige und kleine Unternehmen. 2. Auflage. Heidelberg, Springer Verlag.

Simons, R. (1987). Accounting Control Systems and Business Strategy: An Empirical Analyses, in: Accounting, Organizations and Society. Vol. 12, Issue 4, pp. 357-374.

Six, B. (2012): Strategische Innovationsorientierung von Business-to-Business Unternehmen, in: Stock-Homburg, R. and Wiseke, J. (Editor): Eine implementierungsbezogene Perspektive. Wiesbaden: Gabler, p. 61.

Sople, V. (2009): Business Process Outsourcing: A Supply Chain of Enterprises. New Delhi. Published by Asoke K. Gosh. PHT Learning Private Limited.

Spur, G. (2009): Mittelstand – Schlüsselakteur im deutschen Innovationssystem, in: Franz, O. (Editor): Innovationsdruck auf mittelständische Betriebe. Sternenfels: Verlag Wissenschaft & Praxis, p. 35.

Staab, J. (2015): Die 7 häufigsten Insolvenzgründe erkennen und vermeiden. Wie KMU nachhaltig erfolgreich bleiben. Wiesbaden: Springer Gabler Verlag.

Staiger, M. (2008): Wissensmanagement in kleinen und mittleren Unternehmen, in: Peters, S. (Editor): Systematische Gestaltung einer wissensorientierten Organisationsstruktur und -kultur. München und Mering: Rainer Hampp, p. 17.

Stein, P. (2014): Handbuch Methoden der empirischen Sozialforschung, in: Bauer, N. and Blasius, J. (Editor): Forschungsdesign für die quantitative Sozialforschung, Wiesbaden: Springer, pp. 135-152.

Steinert, C. (2013): Gestaltung der Weiterbildung in kleinen und mittleren Unternehmen. Situationsanalyse und Entwicklungsmöglichkeiten. Wiesbaden: Deutscher Universitätsverlag.

Stock-Homburg, R. (2010): Personalmanagement: Theorien – Konzepte – Instrumente. 2. Auflage. Wiesbaden: Gabler.

Stockinger, K., Stadelmann, T. and Ruckstuhl, K. (2016): Big Data: Grundlagen, Systeme und Nutzungspotentiale, in: Fasel, D. and Meier, A. (Editor): Data Scientist als Beruf, Wiesbaden: Springer Vieweg, pp. 59-82.

Szyja, B. (2015): Integriertes Prozessmanagement für Qualität, Umwelt- und Arbeitsschutz in kleinen und mittleren Unternehmen. Hamburg: Igel Verlag.

Tallyfox (2020): Cloud-Based Knowledge Management Solutions. Retrieved 2020, August 25, from: https://www.tallyfox.com/product.

Tegel, T. (2015): Multidimensionale Konzepte zur Controllingunterstützung in KMU. Wiesbaden: GWV Fachverlage.

Thieme, F. (2008): Alter(n) in der alternden Gesellschaft: Eine soziologische Einführung in die Wissenschaft vom Alter(n). Wiesbaden: VS Verlag.

Thonet, P. J. and Poensgen, O. H. (1979): Managerial Control and Economic Performance in Western Germany, in: The Journal of Industrial Economics, Vol. 28, Issue 1, pp. 23-37.

Thomas, M. (2014): Internes Headhunting. Talente entdecken – Führungskräfte entwickeln. Leonberg: Rosenberger Fachverlag.

Troßmann, E. (2018): Controlling als Führungsfunktion. Eine Einführung in die Mechanismen betrieblicher Koordination. München: Vahlen.

Tschandl, M. (2012): Integriertes Umweltcontrolling, in: Tschandl, M. and Posch, A. (Editor): Von der Stoffstromanalyse zum Bewertungs- und Informationssystem, 2. Auflage. Wiesbaden: Gabler Springer, p. 16.

Urigshardt, T., Jacobs, J. and Letmathe, P. (2008): Die Rolle des Controllers im Mittelstand: Funktionale, institutionale und instrumentelle Ausgestaltung, in: Lingnau, P. and Becker, A. (Editor): Externes Controlling als Ansatz für Kleinst- und Kleinunternehmen? Band 8. Lohmar: Eul Verlag, pp. 1-24.

Vedder, G., Göbel, E. and Krause, F. (Editor) (2011): Fallstudien zum Diversity Management. Band 12. München: Rainer Hampp Verlag.

Volkens, B. and Anderson, K. (2017): Digital human: Der Mensch im Mittelpunkt der Digitalisierung. Frankfurt: Campus Verlag.

Wagner, M. (2004): Business Networking im Internet. Interaktive Anbahnung von Kooperationen in Unternehmensnetzwerken. Dissertation. Wiesbaden: GWV Fachverlage GmbH.

Wagner, P. and Hering, L. (2014): Handbuch Methoden der empirischen Sozialforschung, in: Bauer, N. and Blasius, J. (Editor): Online-Befragung, Wiesbaden: Springer, pp. 661-674.

Wankel, C. (2008): 21st Century Management: A reference handbook. New York: Sage Publications.

Weber, J., Schäffer, U. (2000): Balanced Scorecard & Controlling. Implementierung – Nutzen für Manager und Controller – Erfahrungen in deutschen Unternehmen. 3. Auflage. Wiesbaden: Gabler.

Weber, J., Schäffer, U. and Prenzler, C. (2001): Zur Charakterisierung und Entwicklung von Controlleraufgaben, in: Zeitschrift für Planung, Vol. 12, Issue 1, pp. 25–46.

Weber, J. and Schäffer, U. (2008): Einführung in das Controlling. 12. Auflage. Stuttgart: Schäffer-Pöschel Verlag.

Weber, P. W., Liessmann, K. and Mayer, E. (1993): Unternehmenserfolg durch Controlling. Controlling – Ursprung und Gegenstand, Der Controller im Unternehmen. Strategisches Controlling. Der Werkzeugkasten des Controllers. Controlling – Checklisten. Wiesbaden: Gabler.

Weinberger, O. (1991): Law Institution and Legal Politics: Fundamental Problems of Legal Theory and Social Philosophy, Wiesbaden: Franz Steiner.

Welter, F. (2013): Management für KMU und Gründungsunternehmen, in: Bouncken, Ricarda B. (Editor): Strategien und strategisches Verhalten von KMU. Wiesbaden: DUV Verlag, pp. 27-48.

Wenninger-Zeman, K. (2003): Controlling in Unternehmensnetzwerken. Eine organisationstheoretische Betrachtung. Dissertation. Wiesbaden: GVW Fachverlage.

Wetterer, E. C. (2005): Die Kunst der richtigen Entscheidung. 40 Methoden die funktionieren. Hamburg: Murmann Verlag.

Wiederkehr, B. and Züger, R. M. (2010): Risikomanagementsystem im Unternehmen. Grundlagen mit zahlreichen Beispielen, Repetitionsfragen und Antworten. Merenschwand: Edubook.

Williamson, O. E. (1975): Markets and Hierarchies: Analysis and Antitrust Implications: A study in the Economics of Internal Organization, New York: Free Press.

Williamson, O. E. (1981): The Economics of Organization: Transaction Cost Approach, in: American Journal of Sociology, Vol. 87, Issue 3, pp. 548-577.

Williamson, O. E. (1990): Transaction Cost Economics, in: Schmalensee, R., Willig, R. D. (Editor): Handbook of Industrial Organization, pp. 135-182.

Winter, P. (2007): Risikocontrolling in Nicht-Finanzunternehmen, in: Lingnau, V. and Becker, A. (Editor): Entwicklung einer tragfähigen Risikocontrolling-Konzeption und Vorschlag zur Gestaltung einer Risikorechnung. Reihe: Controlling, Band 5. Lohmar. EuL Verlag, p. 157.

Wojciechowska, M. (2016): Intangible Organizational Resources: Analysis of Resource-Based Theory and the measurement of Library Effectiveness, London: Springer Nature.

Wolf, T., Kuttner, M. and Feldbauer-Durstmüller, B. (2017): Controlling für kleine und mittlere Unternehmen, in: Müller, D. (Editor): Anforderungen an Controller in KMU, 2. Auflage, Berlin: De Gruyter, pp. 2-33.

Wrase, I. (2010): Mitarbeitermotivation im Outsourcing unter besonderer Berücksichtigung des Facility Managements. Dissertation. Wiesbaden: Gabler.

Zahlenklar (2020): Externes Controlling, der effiziente Controller-Service für KMU. Retrieved 2020, June 24, from: https://www.zahlenklar.de/leistungen/externes-controlling/.

Zaitsava, S. (2011): Langfristige Unternehmenssicherung in KMU durch optimale Liquiditätsplanung und -steuerung. Hamburg: Diplomica Verlag.

Zielke, S., Müller-Hagedorn, L. and Toporowski, W. (2012): Der Handel und seine Erscheinungsformen. Entscheidungsorientierung als Denkrahmen für Managementprobleme im Handel. 2. Auflage. Stuttgart: Kohlhammer.

Zimmermann, C. (2001): Controlling in international tätigen mittelständischen Unternehmen. Einführung – Gestaltung – Performance. Dissertation. Wiesbaden: Springer.

APPENDIX

APPENDIX A: QUESTIONNAIRE FOR ONLINE SURVEY (GERMAN)

Dissertationsprojekt:

Outsourcing von Controlling Funktionen in kleinen und mittleren Unternehmen (KMUs)

Sehr geehrter Teilnehmer,

vielen Dank für Ihr Interesse und Ihre Unterstützung hinsichtlich meines Dissertationsvorhabens. Die Zielsetzung dieser Erhebung liegt darin, die Gründe für das Outsourcing von Controlling Funktionen sowie den Status quo des Controllings in kleinen und mittleren Unternehmen wissenschaftlich zu erforschen sowie für die Praxis wertvolle Ergebnisse abzuleiten. Ich bitte Sie daher die Fragen vollständig zu beantworten.

Viele Dank für Ihre Unterstützung.

I. Angaben zum Unternehmen

Wieviel Mitarbeiter beschäftigen Sie in Ihrem Unternehmen?

- 250 bis 499 Mitarbeiter
- 100 bis 249 Mitarbeiter
- 50 bis 99 Mitarbeiter
- 10 bis 49 Mitarbeiter
- 1 bis 9 Mitarbeiter

Wie hoch war Ihr Umsatz im letzten Geschäftsjahr?

- Über 50 Millionen Euro
- Bis zu 50 Millionen Euro
- Bis zu 10 Millionen Euro
- Bis zu 2 Millionen Euro
- Bis zu 1 Million Euro

Wie zufrieden sind Sie mit Ihrer Profitabilität, Vorjahresgewinn, Gesamtentwicklung, Marktanteil und Liquidität?

- Sehr zufrieden
- Zufrieden
- Etwas zufrieden
- Weniger zufrieden
- Eher unzufrieden

II. Status Quo Controlling

Haben Sie aktuell ein externes Controlling in Ihrem Unternehmen?

- Aktuell nicht, aber in 3 Jahren möglich
- Ja, haben wir
- Ja, hatten wir in der Vergangenheit, aber aktuell nicht mehr
- Nein, wir planen auch keins in den nächsten 3 Jahren

Welche anwendungsbasierten Ressourcen wenden Sie im Unternehmen an?

- Informationssysteme
- Business Intelligence Lösungen
- Spezielle Tools
- Cloud Solutions
- Sonstige

Wie stark sind die anwendungsbasierten Ressourcen ausgeprägt?

- Sehr stark ausgeprägt
- Stark ausgeprägt
- Moderat ausgeprägt
- Weniger ausgeprägt
- Nicht vorhanden

Welche speziellen Kenntnisse sind im Controlling vorhanden?

- Kommunikationsfähigkeiten
- Prozess-spezifische Expertise
- Beratungskompetenz
- Initiator / Kreativität
- Sonstige

Welchen digitalen Reifegrad haben Sie im Controlling basierend auf dem Rollenmodel?

- Stufe 5
- Stufe 4
- Stufe 3
- Stufe 2
- Stufe 1

Wie führen Sie die Unternehmensplanung aus?

- Kurz- bis mittelfristig und langfristig
- Langfristig
- Kurz- bis mittelfristig
- Weder kurz- bis mittelfristig noch langfristig
- Kann ich nicht sagen

Welches Werkzeug nutzen Sie für die Unternehmensplanung?

- Operative Instrumente
- Markt-orientierte Instrumente
- Strategische Instrumente
- Wir führen keine Unternehmensplanung aus
- Sonstige

III. Gründe für externes Controlling

Wer führt Controlling Funktionen in Ihrem Unternehmen aus?S

- Geschäftsführer
- Kaufmännischer Leiter
- Teamleiter Controlling
- Controller
- Sonstige

Welche Qualifikation weist die Person auf, die Controlling Funktionen ausübt?

- Betriebswirtschaft & Controlling
- Buchhaltung
- Wirtschaftsinformatik
- Informationstechnologie
- Sonstige

Wie wichtig ist die strategische Bedeutung des Controllings in Ihrem Unternehmen?

- Sehr wichtig
- Wichtig
- Weniger wichtig
- Unwichtig
- Kann ich nicht sagen

Wie hoch schätzen Sie den Einfluss des Controllings in Ihrem Unternehmen ein?

- Sehr hoch
- Hoch
- Mittel
- Gering
- Sehr gering

Wie hoch schätzen Sie die Defizite der anwendungsbasierten Ressourcen?

- Sehr hoch
- Hoch
- Weniger hoch
- Nicht hoch
- Kann ich nicht sagen

Wie hoch schätzen Sie die Defizite hinsichtlich der Controlling Kompetenzen?

- Sehr hoch
- Hoch
- Weniger hoch
- Nicht hoch
- Kann ich nicht sagen

Das Controlling hat keine Defizite

- Stimmt voll überein
- Trifft eher zu
- Weder richtig noch falsch
- Stimmt eher nicht überein
- Stimmt keineswegs

Die digitale Transformation wird die Qualität und Geschwindigkeit der Informationsversorgung erhöhen, zur Echtzeit Evaluation beitragen, das Profil des Controllers verändern und zur Dezentralisierung des Controllings führen.

- Stimmt voll überein
- Trifft eher zu
- Weder richtig noch falsch
- Stimmt eher nicht überein
- Stimmt keineswegs

Welches zukünftige Rollenmodel entspricht dem des Controllers vor dem Hintergrund der digitalen Transformation?

- Change Manager
- Data Scientist
- Navigator
- Controller
- Business Partner

Welche Technologien wenden Sie im Controlling an, die im Zusammenhang mit der digitalen Transformation in Verbindung stehen?

- Cloud Computing
- Predictive Analytics
- Big Data Technologien
- Prescriptive Analytics
- Sonstige

Welche Tools verwenden Sie, um Daten für das Management vorzubereiten?

- Excel
- Spezielle Statistik Software
- Business Intelligence Lösungen
- Management Informationssysteme (MIS)
- Sonstige

Externes Controlling ist sinnvoll, wenn das Unternehmen keinen eigenen Controller beschäftigen kann, wenn es zur verbesserten Entscheidungsfindung beiträgt, wenn es hohe Expertise für Change-Management bietet, wenn es dazu beiträgt, sich auf seine Kernkompetenzen zu fokussieren und wenn es Potentiale für Kosteneinsparungen bietet.

- Ersatz für in-house Controller
- Verbesserte Entscheidungsfindung
- Hohe Expertise bei Change-Management
- Fokussierung auf Kernkompetenzen
- Potentiale für Kosteneinsparungen

Outsourcing von Data Science Aufgaben bietet hohes Know-how, ist kostengünstiger im Vergleich zu einem eigenen Controller, trägt zu positiven Geschäftsergebnissen bei und bietet Kosteneinsparungen im Hinblick auf Mitarbeiterschulungen, Infrastruktur und Informationstechnologie.

- Kosteneinsparungen
- Positive Geschäftsergebnisse
- Hohes Know-how
- Kostengünstige Alternative

Welches der vier Controlling Funktionen haben Sie an Service Dienstleister übertragen oder werden Sie an Service Dienstleister übertragen?

- Analyse
- Information
- Planung
- Steuerung
- Keines der aufgeführten Funktionen

Welche Form des Controllings haben Sie im Unternehmen bzw. werden Sie umsetzen?

- Externer Controller & Steuerberater
- Externer Controller (Business Partner)
- Externer Controller & Outsourcing Data Science
- Outsourcing Data Science
- Keines der aufgeführten Alternativen

Welche Kriterien legen Sie zugrunde, um externe Controller zu beauftragen?

- Transparenz
- Responsibilität
- Schnelligkeit
- Verlässlichkeit
- Pünktlichkeit

Welche Risiken existieren in der Zusammenarbeit mit externen Controllern?

- Mittel bis langfristige Abhängigkeit
- Geringe Kontrollmöglichkeit der Performance
- Mangel an Qualität und Intensität in der Kommunikation
- Mangel an kritischer Distanz seitens des externen Controllers
- Keine Risiken

Welche Ziele verfolgen Sie mit einem externen Controlling?

- Prozessoptimierungsziele
- Qualitätsziele
- Effizienzziele
- Kostenziele
- Profitziele

APPENDIX B: QUESTIONNAIRE FOR ONLINE SURVEY (ENGLISH)

Dissertation project:

Outsourcing of Management Accounting Functions in Small and Medium-sized Enterprises (SMEs)

Dear participant,

Thank you for your interest and your support regarding my dissertation project. The aim of this survey is to scientifically research the reasons for the outsourcing of management accounting functions as well as the status quo of management accounting in small and medium-sized enterprises and to derive valuable results for practice. I therefore would like to ask you to answer the questions in full.

Thank you for your support.

I. Enterprise details

Please indicate the number of employees in your enterprise.

- 250 to 499 employees
- 100 to 249 employees
- 50 to 99 employees
- 10 to 49 employees
- 1 to 9 employees

What was your turnover in the last financial year?

- Turnover over 50 million Euro
- Turnover up to 50 million Euro
- Turnover up to 10 million Euro
- Turnover up to 2 million Euro
- Turnover up to 1 million Euro

How satisfied are you with your profitability, profit forecast, overall development, market share, and liquidity?

- Very satisfied
- Satisfied
- A little satisfied
- Less satisfied
- Rather dissatisfied

II. Status Quo of management accounting

Do you currently have an off-site management accounting in your enterprise?

- Currently not, but possible in 3 years
- Yes, we have
- Yes in the past, but not anymore
- No, and not planned in 3 years

Which application-based resources do you use in management accounting?

- Information systems
- Business Intelligence Solutions
- Special tools
- Cloud Solutions
- Others

How strong is the specification of the application-based resources in management accounting?

- Very well-developed
- Well-developed
- Moderately developed
- Less developed
- Inexistent

What specific skills do you have in the area of management accounting?

- Communication skills
- Process-specific expertise
- Advisory capacity
- Initiator / creative power
- Others

What digital maturity do you have in management accounting based on the role model?

- Level 5
- Level 4
- Level 3
- Level 2
- Level 1

How do you carry out corporate planning?

- Short to medium-term and long-term
- Long-term
- Short to medium-term
- Neither short to medium-term, nor long-term
- Cannot make any statement

Which tools do you use for corporate planning?

- Operational instruments
- Market-oriented instruments
- Strategic instruments
- We do not carry out planning tasks
- Others

III. Reasons for off-site management accounting

Who performs management accounting functions in your enterprise?

- Managing director/Owner
- Commercial director
- Teamleader management accounting
- Management accountant
- Others

What qualifications does the person performing the management accounting have?

- Business administration & management accounting
- Accountancy
- Business computer science
- Information technology
- Others

How important is the strategic relevance of management accounting in your enterprise?

- Very important
- Important
- Less important
- Unimportant
- Cannot make any statement

How high do you estimate the influence of management accounting in your enterprise?

- Very high
- High
- Medium
- Low
- Very low

How high do you estimate the deficits in application-based resources?

- Very high
- High
- Less high
- Not high
- Cannot make any statement

How high do you estimate the deficits in management accounting competencies?

- Very high
- High
- Less high
- Not high
- Cannot make any statement

Management accounting has no deficits.

- Meets completely
- Rather right
- Neither right, nor wrong
- Rather not
- Not at all

Digital transformation will significantly increase the speed and quality of information supply, contribute to real-time evaluation, change the profile of management accountants, and contribute to the decentralization of management accounting.

- Meets completely
- Rather right
- Neither right, nor wrong
- Rather not
- Not at all

Which future role model corresponds to that of a management accountant in the light of digital transformation?

- Change Manager
- Data Scientist
- Navigator
- Controller
- Business Partner

Which technologies do you use in management accounting in connection with digital transformation?

- Cloud Computing
- Predictive Analytics
- Big Data Technologies
- Prescriptive Analytics
- Others

What tools do you use for preparing data for the management?

- Excel
- Special statistic sofware
- Business Intelligence solutions
- Management information systems (MIS)
- Others

Off-site management accounting is useful if enterprise size does not provide a basis for own management accountants, it provides the basis for good decision making, it offers a high level of expertise in change management, it allows concentration on the core business and it offers cost savings potential.

- Substitute for on-site management accounting
- Provides well-informed decision
- High know how within change management
- Focus on core business
- Cost saving potentials

Outsourcing of data science offers a high level of know-how, is cost-efficient in contrast to employing a permanent data scientist, contributes to positive business results, and offers savings potential in the training of employees, infrastructure, and information technology.

- Savings potentials
- Positive business results
- High know how
- Cost-efficient alternative

Which of the four management accounting functions have you transferred or intend to transfer to service partners?

- Analyses
- Information
- Planning
- Steering
- None of the listed functions

Which alternative of management accounting will you probably choose, or have you decided on?

- Off-site consultant & tax advisor
- Off-site consultant (Business Partner)
- Off-site consultant & Outsourcing Data Science
- None of the listed alternatives
- Outsourcing of data science

What criteria do you use to select off-site management accounting consultants?

- Transparency
- Responsiveness
- Speed
- Reliability
- Timeliness

What are the risks involved in working with off-site management accounting consultants?

- Medium to long-term dependence
- Low control over work performance
- Lack of quality and intensity of communication
- Lack of critical distance on the part of the consultant
- No risks

Please indicate the objective you are pursuing by the creation of an off-site management accounting.

- Process optimization goals
- Quality goals
- Efficiency goals
- Cost goals
- Profit goals

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WORK ORIGINALITY SWORN STATEMENT

I, Serap Demiröz, with passport U04930148, student enrolled in the International Doctoral School in the Catholic University San Antonio de Murcia,

DECLARE

To be the sole author of the text submitted to obtain the academic title of Doctor, and that such text has not been submitted totally or partially to obtain an academic title in any other university or institution, nor has it been published previously for any other purpose.

Likewise, I declare that I have not breached any university regulations regarding plagiarism or established laws protecting intellectual property.

I further declare that the submitted PDF file format corresponds exactly to the printed text submitted together with it.

Finally, I declare that I am aware of the penal sanctions in case of violating the laws of plagiarism and false declaration and that I do sign this with full use of my faculties and assuming all the responsibilities derived from it.

Signature: S. Demiröz

Essen, July 2021